Government of Saskatchewan

Annual Report 1989-90

Saskatchewan Environment and Public Safety

Table of Contents

91-04393/

Letters of Transmittal **2**

Organization Chart **4**

Department Mandate **5**

Planning and Assessment Division **6**

Environmental Assessment Branch 7

Communications Branch 13

Strategic Planning Branch 14

Saskatchewan Round Table on Environment and Economy 16

Research and Special Projects 18

Environmental Protection Division **19**

Air and Land Protection Branch 20

Water Quality Branch 30

Mines Pollution Control Branch 33

Public Safety Division **38**

Mechanical Services Branch 39

Fire Commissioner's Branch 43

Building Standards Branch 49

Licensing and Support Services Section 50

Emergency Measures Organization **52**

Administration Branch **55**

List of Tables **61**

List of Figures **63**

Letters of Transmittal

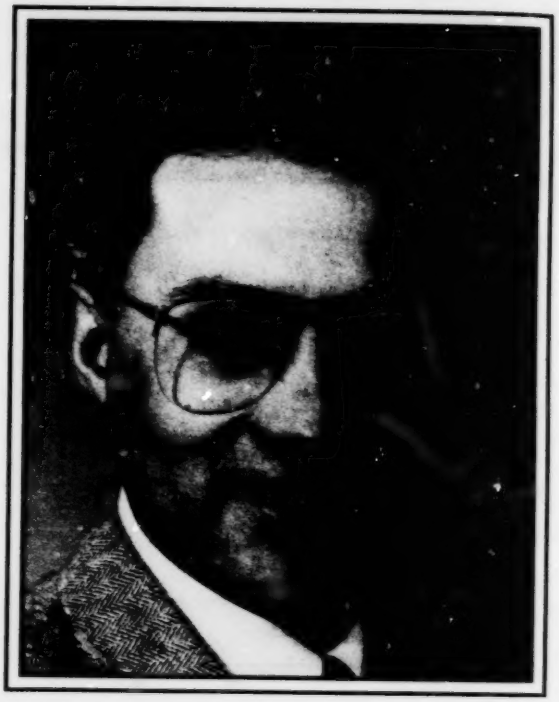
Her Honour
The Honourable Syliva O. Fedoruk, O.C., S.O.M.
Lieutenant Governor of Saskatchewan
Government House
4607 Dewdney Avenue
Regina, Saskatchewan
S4P SV7

Your Honour:

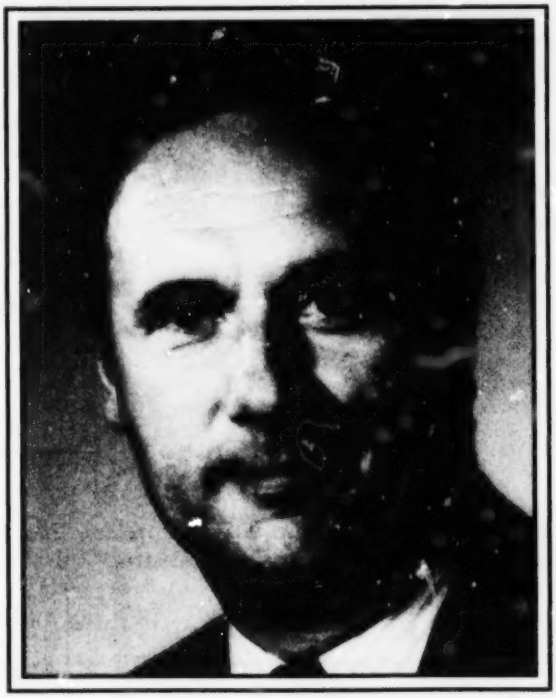
It is my pleasure to submit to you the Annual Report for the Department of Environment and Public Safety for the fiscal year ending March 31, 1990.

Respectfully submitted,

Grant Hodgins



The Honourable Grant Hodgins
Minister of Environment and Public Safety



Dear Sir:

It is my pleasure to present to you the 1989-90 Annual Report for the Department of Environment and Public Safety.

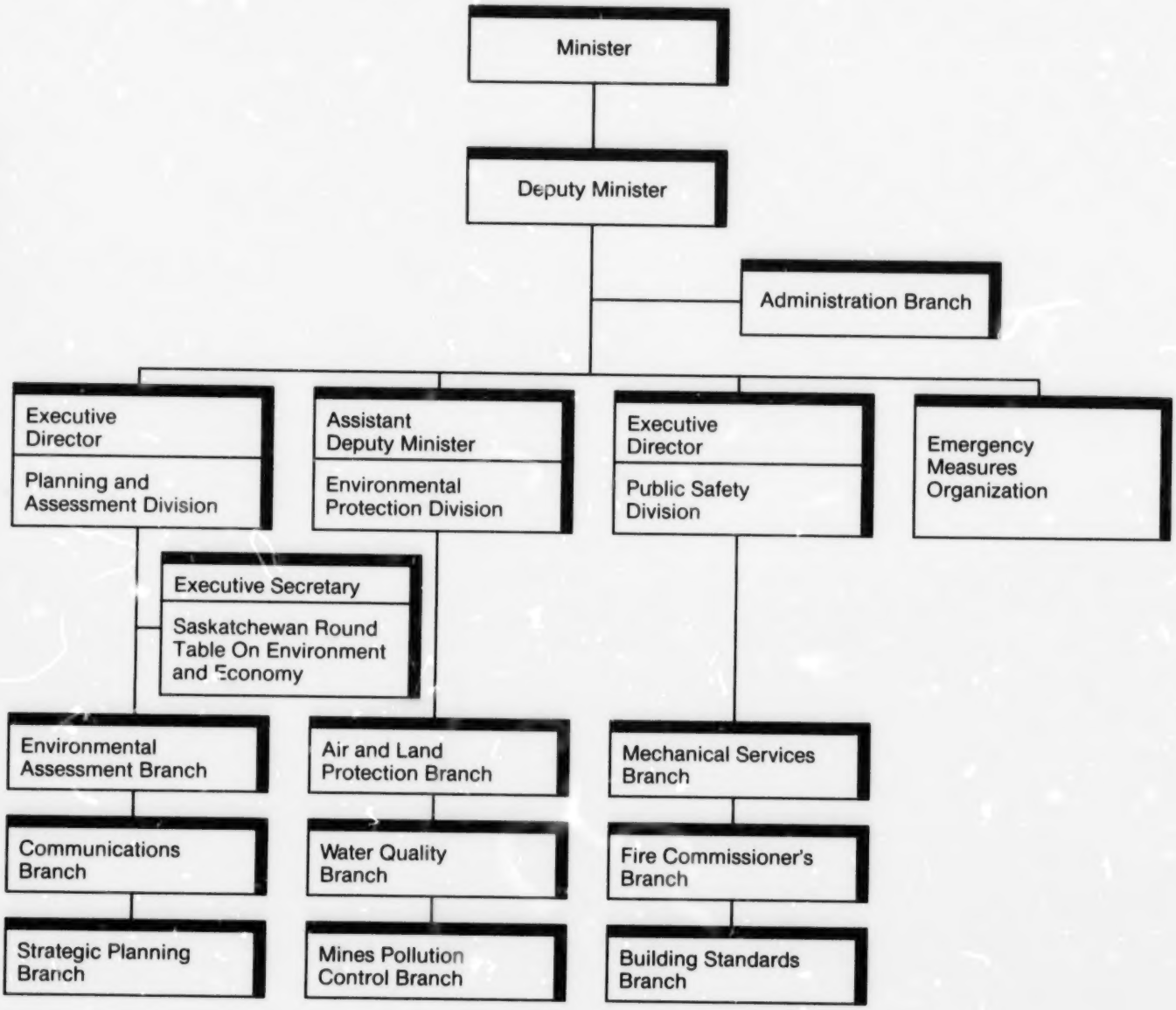
As we enter the 1990s, our department is facing monumental changes to keep up with a massive shift in society's attitudes and with rising public expectations. For citizens, businesses, industries and governments, these changes are demanding that we respond with a renewed sense of personal and corporate responsibility. Our goals are to protect Saskatchewan's healthy environment, to ensure the safety of our people and to achieve sustainable development in our province.

I commend all staff for their contribution to the success of the department and I look to the challenges we will come up against in the 90s.

Respectfully submitted,

Les Cooke
Deputy Minister

Organization Chart



Department Mandate

The mandate of Saskatchewan Environment and Public Safety is threefold:

Environmental Protection

- To protect and enhance the environment in a manner that promotes the physical, economic and social well-being of the people of Saskatchewan today and in the future.

Public Safety

- To provide and maintain safety standards for industry and the general public in the fields of boiler and pressure vessel installations; elevator and amusement ride installations; building and accessibility standards; fire safety and licensing of persons engaged in work of gas and electrical installation.

Emergency Measures

- To develop and maintain an effective emergency response capability at the provincial and municipal levels of government to ensure the survival and recovery of our citizens and communities from any peacetime emergency or disaster.

Legislation

The following acts were administered by Saskatchewan Environment and Public Safety in the 1989-90 fiscal year :

The Clean Air Act
The Ecological Reserves Act
The Emergency Planning Act
The Environmental Assessment Act
The Environmental Management and Protection Act
The Environmental Management and Protection Consequential Amendment Act
The Litter Control Act
The Water Appeal Board Act
The Amusement Ride Safety Act
The Boiler and Pressure Vessel Act
The Electrical Licensing Act
The Fire Prevention Act
The Gas Licensing Act
The Passenger and Freight Elevator Act
The Uniform Building and Accessibility Standards Act

Planning and Assessment Division

Mission

To plan for the protection and enhancement of the environment; to assess proposed development projects to ensure consistency with environmental protection; to increase public awareness of environmental protection activities; and, to establish the principles of sustainable development to maintain the physical, economic, and social well-being of the province and its people, now and in the future.

Activities

Planning and Assessment activities are concentrated in four branches reporting directly to the executive director.

- Environmental Assessment Branch
- Strategic Planning Branch
- Communications Branch
- Saskatchewan Round Table on Environment and Economy

Environmental Assessment Branch

Objectives

- To have prospective developers fully informed about Saskatchewan's environmental protection policies and regulatory requirements.
- To have all plans for future development activities in or near Saskatchewan fully evaluated as to the acceptability of their likely environmental implications before commitments to proceed with those plans are made.
- To have in Saskatchewan a system of reserves which exemplify and protect both unique and typical aspects of the province's natural heritage.

Activities

- Apprise prospective developers of provincial environmental requirements applicable to their development proposals, particularly those requirements under legislation administered by Saskatchewan Environment and Public Safety.
- Administer Saskatchewan's environmental assessment process in accordance with requirements and provisions of the provinces *Environmental Assessment Act,* and in so doing:
  - review preliminary development concepts to help prospective developers identify potential environmental and socio-economic problems therewith and define the scope of any assessments which might be necessary to satisfactorily address those problems and produce environmentally sound development plans.
  - review each Environmental Impact Statement (EIS) submitted to the department by a developer seeking Ministerial Approval under *The Environmental Assessment Act*, to ensure that the document provides a technically sound basis for both public evaluation of the proposed development's likely environmental implications and the minster's subsequent decision regarding if and how it may proceed;
  - facilitate public examination of and comments on each EIS in accordance with the requirements and provisions of *The Environmental Assessment Act;*
  - recommend to the minister conditions which he might attach to his approval of each new development to increase the likelihood of its proceeding in an environmentally acceptable manner; and
  - monitor the implementation of plans approved under *The Environmental Assessment Act* to ensure developer's compliance with the terms and conditions of their approvals, and recommend appropriate action in any case where a developer fails to comply with those terms or conditions.
- Administer Saskatchewan's *Ecological Reserves Act*, and in so doing:
  - identify areas of the province worthy of reserve status;
  - arrange for official designation of those areas; and
  - establish conditions under which the reserves are to be managed and protected.
- Represent the department on inter-agency and inter-jurisdictional committees and study teams attending to multi-disciplinary environmental matters of importance to Saskatchewan.
- During the 1989-90 fiscal year, 84 new development proposals were submitted to the branch for formal review through the environmental assessment process. In addition, reviews of 22 proposals from the previous year continued in 1989-90. The status of the various proposals received or under review during the fiscal year was as follows:

Table 1

Projects Undergoing an Impact Assessment or Undergoing Screening at Year End

Proponent	Project
Amok Ltd.	In Lake Pit Development (uranium mining)
Amok Ltd.	Off Lake Pit Development (uranium mining)
Atomic Energy of Canada Ltd.*	Slowpoke Reactor Energy System
Cameco	Contact Lake Gold Mine Development
Cameco	Preview Lake Gold Mine Development
Cameco	Hanson Lake Copper-Zinc Sulphide Deposit
Cameco	Preview Lake Gold Mine Development
Cameco	Rabbit Lake In-Pit Tailings Disposal
Cigar Lake Mining Corporation	Permanent Access Road
Cigar Lake Mining Corporation*	Waterbury Lake Uranium Development
City of Regina	Waste Management Study
Claude Resources Ltd.	Gold Mine Development, Laonil Lake
Denison Mines Ltd.	Midwest Joint Venture Uranium Project
Ducks Unlimited Canada	Thunder Creek Marshes Wetland Development Project
Ekaton Industries Ltd.	Kaolin Mine and Mill, Wood Mountain Area
Enviropulp Products Ltd.	Waste Paper Recycling Plant, Bradwell Area
Esso Petroleum Canada	Hazardous Waste Receiving and Transfer Station, Regina
Estevan Coal Corporation	Shand Coal Mine
Kasner Gold Fields	Gold Mine Development, Uranium City Area
Ellen Resources Ltd.	
Lone Pine Resources Ltd.	Gas field Development Crane Lake North-Freefight Lake Area
Lone Pine Resources Ltd.	Freelight Lake Gas Development, Phase 3 & 4
Mark Resources Inc.	Brine Disposal Site, Fox Valley Area
Minatco Ltd.	McClean Lake Uranium Development
NorSask Biomass Corporation	Jan Bay Biomass Power Project
Nortek Forest Products Corporation	Nipawin Pulp Mill
North Canadian Oils Ltd.	Bigstick Lake Gas Development Project
North Canadian Oils Ltd.	Brine Disposal Pond, Gold Prairie Area
North Canadian Oils Ltd.	Brine Disposal Pond, Maple Creek Area
Ocelot Industries Ltd.	1989 Sand Hills Gas Development Program
Poco Petroleums Ltd.	Fusilier Natural Gas Plant
Royex Gold Mining Corporation	Muskeg Treatment of Tailings Effluent, Jolu Gold Mine
Rural Municipality of Hoodoo	Wakaw Lake Weir
SaskOil	Gas Well Sites, Primrose Air Weapons Area
Trucena Investments Ltd.	Exploratory Well Site, Great Sand Hills
Weyerhaeuser Canada Ltd.	Sawmill West Forest Haul Road

*Baseline studies are currently being carried out for these projects - a decision to proceed with the projects has not as yet been made by the proponents.

Table 2

Projects Screened - Impact Assessments Not Required

Proponent	Project
Black Lake Transportation Co.	Pilot ATV Winter Haul Road, Points North to Garson Lake
Bow Valley Industries Ltd.	Bigstick Lake Gas Development Project
Bow Valley Industries Ltd.	Brine Evaporation Ponds - Hatton Gas Field
Bow Valley Industries Ltd.	Produced Water Disposal Sites, Piapot Area
Bow Valley Industries Ltd.	Produced Water Evaporation Ponds, Hatton Gas Field
Cameco	Fork Lakes Gold Development, Transom Ore Zone
DSWK Holdings Ltd.	Brine Disposal Site, Liebenthal Area
DSWK Holdings Ltd.	Gas Production Project, Liebenthal Area
DSWK Holdings Ltd.	Produced Water Disposal Sites, Liebenthal Area
Ducks Unlimited Canada	Bily Wetland Development Project
Ducks Unlimited Canada	Campbell Wetland Development Project
Ducks Unlimited Canada	Fleetwood Wetland Development Project
Ducks Unlimited Canada	Hyas South Wetland Development Project
Ducks Unlimited Canada	Jesmer Wetland Development Project
Ducks Unlimited Canada	Lloyd Lagoon Wetland Development Project
Ducks Unlimited Canada	Moccasin Lakes Wetland Development Project
Ducks Unlimited Canada	North Creek March Wetland Development Project
Ducks Unlimited Canada	Ravine Ecological Park Wetland Development Project
Ducks Unlimited Canada	Shaunavon Wetland Development Project
Ducks Unlimited Canada	Sucker Lake Complex Wetland Development Project
Ducks Unlimited Canada	Terry Wetland Development Project
Ducks Unlimited Canada	The Marsh Wetland Development Project
Ducks Unlimited Canada	Remediation of Imperial Oil Property, R.M. of Edenwold
Federal Pioneer Ltd.	Power Transformers Manufacturing Plant
Impact Packaging Systems Inc.	Molded Pulp Facility, Swift Current
Lone Pine Resources Ltd.	Brine Evaporation Ponds, Great Sand Hills
Lone Pine Resources Ltd.	Freefight Lake East Gas Development
Lone Pine Resources Ltd.	Freefight Lake East Phase II Gas Development
Lone Pine Resources Ltd.	Freefight Lake "in-fill" Gas Development
Longpres Eagle Point Resorts Ltd.	Resort Campground, McGibbon Bay
Mark Resources Ltd.	Gas Development, Ingebright Lake
NorthSask Forest Products Inc.	Upgrading and Extension of Highway 903
Ocelot Industries Ltd.	Brine Evaporation Pit
Ocelot Industries Ltd.	Brine Evaporation Ponds, Great Sand Hills
Ocelot Industries Ltd.	Freefight Lake "in-fill" Gas Development
Petro-Canada Resources Inc.	Produced Water Disposal Sites, Piapot Area

Table 2 continued

Proponent	Project
Pioneer Explorations Inc.	Seismic Program, Crane Lake Area
Prairie Coal Ltd.	Dewatering System, Utility Coal Mine
Precambrian Shield Resources Ltd.	Gas Development, Ingebright Lake Area
Saferco	Nitrogen Fertilizer Manufacturing Plant, Belle Plain
Safety-Kleen Canada Ltd.	Solvent Distribution and Transfer Facility
Saskatchewan Highways and Transportation	All Weather Road, Black Point to Garson Lake
Saskatchewan Highways and Transportation	Gravel Pit, Garson Lake Road
Saskatchewan Highways and Transportation	Relocation of Highway #55, Cowan River Bridge to Green Lake
Saskatchewan Highways and Transportation	Stony Rapids Airport
SaskOil	Brine Disposal Pond, Marsham Area
SaskOil	Exploratory Gas Wells, Southwest Saskatchewan
SaskOil	Gas Development, Bronson Forest
SaskOil	Gas Wells & Pipeline Gathering System, Senate Gas Field
SaskOil	Seismic Exploration, Meadow Lake Provincial Park
SaskOil	Winter Seismic Program, Primrose Air Weapons Range
SaskPower Corporation	Dewatering Project, Morrison Dam
SaskPower Corporation	Poplar River Mine Dewatering
SaskPower Corporation	Supplemental Groundwater Supply, Boundary Dam
SaskPower Corporation	Geothermal Well, Moose Jaw
Shamrock Chemicals Ltd.	Herbicide Formulating Plant, Regina
Town of Burstall	Golf Course
TransCanada Pipelines Ltd.	Gas Pipeline Looping Program, 1990
TransGas Ltd.	Expansion of Gas Pipeline Network, Consul Area
TransGas Ltd.	Natural Gas Pipeline, Tuberose to TransCanada Pipeline
TransGas Ltd.	1989 Saskatchewan Natural Gas Distribution Program
Trucena Investments Ltd.	Produced Water Evaporation Pond, Liebenthal Area
Venture Seismic Ltd.	Seismic Exploration Program, Manito Lake
Vibra-Phenyl Oil Detoxification Ltd.	PCB Contaminated Oil Treatment, Pilot Project
Vis-a-Vis Resources Inc.	Plastic Bottle Manufacturing Plant, Wynyard
Western Land Services Co.	Well Site and Access Road, Buffalo Gap Area

Table 3

Assessment Process Completed

Proponent	Project
Cameco	Fork Lakes Gold Development
Millar Western Ltd.	Meadow Lake Pulp Mill
Rural Municipality of Val Marie	Access Road to Foothills Compressor Station
SaskPower Corporation	138 kV Transmission Line, Island Falls to Points North

Table 4

Projects Deferred or Cancelled

Proponent	Project
Cameco	Gold Mining Project, Amisk Lake
University of Saskatchewan	Waste Management Facility Incinerator

Other Reviews

In addition to 106 projects undergoing formal environmental assessment review, the Environmental Assessment Branch was involved in the review of an additional 285 project proposals. These proposals were comprised of 50 referrals from the Saskatchewan Water Corporation; 162 proposals related to oil and gas development; 11 proposals related to sand and gravel projects; nine forest cutting plans; three Treaty Indian Land Claims; and, approximately 50 miscellaneous referrals.

A total of 44 blocks and 163 smaller parcels of land located in sensitive rangelands, northern forest areas or dune sand terrain were screened in advance of sales of petroleum and natural gas rights in order to be able to advise potential purchasers of mineral rights of environmental concerns and review and environmental protection requirements prior to their making purchase decisions.

Committee Studies

Ecological Reserves

During the fiscal year of 1989-90, the Environmental Assessment Branch continued setting priorities for creating new ecological reserves.

Wetlands Technical Advisory

The branch continued to represent Saskatchewan Environment and Public Safety on the Wetlands Technical Advisory Committee. The purpose of this committee is to review proposals for water development projects which might affect waterways, lakes and wetlands, to resolve any conflicts which might arise among wildlife, fisheries, agricultural and environmental interests and to encourage development of works which are in the best interest of the Province of Saskatchewan. The committee also includes representatives from the departments of Agriculture, Parks and Renewable Resources, Rural Development and the Saskatchewan Water Corporation. During the 1989-90 fiscal year, 54 projects were reviewed by the Wetlands Technical Advisory Committee.

Environmental Guidelines

The branch continued to distribute environmental protection guidelines pertaining to roads, transmission lines, mineral exploration, sand and gravel pits, heavy oil projects, seismic programs and environmental protection guidelines for oil and gas exploration and development on environmentally sensitive lands. The branch also began to update environmental protection guidelines related to development of roads and transmission lines.

Protection of Environmentally Sensitive Lands

On an ongoing basis, staff of the Environmental Assessment Branch endeavour to identify environmentally sensitive areas within Saskatchewan, assess their vulnerability to different types of development activity and establish mitigation guidelines for prospective developers to follow in those parts of the province where development is expected tc continue or increase.

Considerable effort was again expended in working with affected oil and gas companies, consultants, and other provincial and local government agencies in ensuring that proposed oil and gas projects in environmentally sensitive rangelands, forest areas and dune sands were implemented in an environmentally acceptable manner. Emphasis was placed on project planning by the proponent, a process designed to assure that developers took responsibility for developing and implementing their own environmental protection plans as an integral part of their overall projects. In 1988-89, two proponents initiated environmental impact assessment for natural gas development projects in the Great Sand Hills. In 1989-90, one other proponent was required to undertake an environmental impact assessment for a similar proposed natural gas development in this environmentally sensitive area.

Existing cooperative arrangements were maintained with Saskatchewan Rural Development and Saskatchewan Energy and Mines and other affected agencies to facilitate environmental review of all development activities proposed for the most sensitive lands.

Close liaison was also maintained with Saskatchewan Parks and Renewable Resources as that department has developed policies for oil and gas exploration and development on parks and resource lands.

Communications Branch

In this fiscal year, the Information Services Section of the Administration and Communications Branch became a branch. The Communications Branch is now part of the Planning and Assessment Division.

The Communications Branch's kept the public informed of all department programs and policies, as well as other issues of environmental and public safety concern. This was achieved through the use of advertisements, news releases, notices and tender ads.

The branch continued to provide a media clipping service on all issues of environmental and public safety concern to all branches in the department.

Existing information materials continued to be distributed on request. New print materials were developed on the Hazardous Substances Regulations, Saskatchewan Round Table on Environment and Economy and the Agricultural Chemical Collection Program.

The Clean Cat anti-litter program was the major focus of Environment Week activities and advertising. The program offered garbage bags to all schools in the province that chose to participate in an anti-litter program during Environment Week. Clean Cat, the department's mascot, visited a number of schools during the week.

The Communications Branch also assisted in establishing information centres throughout the province to enable the public to view Environmental Impact Assessment documents on proposed new developments.

Strategic Planning Branch

Objectives

- To ensure that existing and developing environmental management and protection issues are addressed by the department and the province.
- To develop comprehensive policies and planning strategies to meet both short- and long-term program goals.

Activities

- Develop and implement new environmental initiatives.
- Coordinate the development of environmental management programs in the department and among other government agencies.
- Monitor new environmental developments and initiatives in the government, industry and the private sector.
- Identify economic development opportunities directly related to environmental concerns.
- Coordinate the department's involvement with the Canadian Council of Ministers of the Environment (CCME).
- Provide technical and administrative support to Saskatchewan's Round Table on Environment and Economy.
- Communicate with agencies and the public on matters pertaining to the environment.

Ecological Inventory

The branch has taken the lead role in efforts to improve the availability of ecological information that is necessary for planning and development. An inter-agency committee was established to determine the potential for establishing a Natural Heritage Data Centre in Saskatchewan.

If established, the centre would collect, store and disseminate information on endangered and threatened species, and critical and significant ecosystems.

Climate Change Greenhouse Study

The branch began development of a strategy to mitigate, and where possible, take advantage of the economic and environmental impacts of climate change in the province. This strategy will provide direction for the government in the management of the province's resources and environment as they relate to climate change and variability.

Biomedical Waste

The department, with the assistance of the Strategic Planning Branch, has undertaken the development of a biomedical waste management strategy. While biomedical waste management in the narrow sense involves the proper collection, storage, transportation, treatment and disposal of the waste, a waste management strategy also involves exploiting opportunities to reduce the quantities of waste destined for treatment and disposal.

Waste Dangerous Goods Management Plan

The Province of Saskatchewan is developing a comprehensive plan to manage hazardous waste, or waste dangerous goods. This plan embraces the hierarchy of responsible waste management, which sets waste reduction as the preferred practice, followed by reuse, recycling, and recovery initiatives (the 4Rs). Waste treatment and disposal practices will only be undertaken if the 4R alternatives are not available or economically viable, and when treatment and disposal can be undertaken in a manner that protects human health, safety and the environment.

The strategy will occur in three phases: strategy development, regulatory development and public consultations. The first two phases were initiated in 1989-90.

Municipal Solid Waste

The branch conducted preliminary investigations into the feasibility of a blue box recycling program in the province. Questionnaires were sent to selected cities in Canada to learn from their recycling experiences, potential markets for collected materials were identified and the economics of blue box recycling was assessed.

Up to $750,000 was identified in the Environmental Protection Fund for up to three two-year pilot recycling projects in the province. Terms of reference for a Pilot Blue Box Recycling

Project were prepared, and communities with a population of 3,000 or more were invited to apply. Selection of the community or communities to host the pilot project is expected by the end of 1990.

Government Procurement Practices

The branch is involved in the development of a general policy for environmentally sound procurement principles. This is being done in cooperation with other governments in Canada, and is to be recommended for approval by the committee of ministers responsible for procurement. The policy is intended to promote the use of environmentally responsible products and processes that will enhance, protect, and preserve the Canadian environment and economy.

Conservation Strategy Development

The branch played an important role in assisting with the development of the provincial conservation strategy. Accomplishments include developing an outline for the strategy, assisting with the formation and facilitation of sector advisory groups and providing research and writing support as required.

Market Opportunities West (MOW)

The branch helped to organize MOW, a reverse trade show run in conjunction with Index90. Procurement officials from both private and public sectors exhibited items currently purchased from suppliers outside of Western Canada. The objective was to encourage the manufacturing of these products in the West. The environmental sector of MOW exhibited products that the four western provinces would like to see manufactured within Western Canada in an environmentally friendly form. Part of the exhibit also displayed samples of environmentally related products already manufactured in Western Canada. The branch assisted in coordinating the preparation of displays, literature, and other materials, and in staffing the exhibits.

Public Education

The branch frequently accepts invitations to speak to school or university students, and other organizations. Lecture topics have included soil conservation issues, sustainable development in the energy sector and recycling opportunities.

Saskatchewan Round Table on Environment and Economy

- Established late in fiscal year 1988-89, the Saskatchewan Round Table on Environment and Economy comprised 18 members. Membership at year's end had been reduced to 17, by the resignation in November, 1989, of Mr. Bill Duke.

Objectives

- To advise the premier of Saskatchewan on the integration of economic and environmental decision-making with the goal of achieving sustainable development in the province.

Activities

- To promote, explain and introduce the concept of sustainable development in all sectors of public and private development in the province.
- To establish a conservation strategy by the end of 1991, to ensure that the province's resources are used and protected in an environmentally, economically and socially sound manner. The development of this conservation strategy will be based on a process of consultation among government, industry, interest groups and the general public.
- To promote public awareness and understanding of the linkages between the environment and economy and the principles of sustainable development, which include:
  - developing a communication/education plan;
  - promoting, monitoring and reporting on sustainable development demonstration projects; and,
  - recognizing outstanding work on environment-economy integration and environmental excellence through the presentation of annual awards.
- The Round Table liaises with other provincial Round Tables and the National Round Table to ensure that its activities are coordinated and complementary.
- The Round Table monitors and reports to the premier on Saskatchewan's progress in implementing the recommendations of the National Task Force on Environment and Economy.

Round Table Secretariat

Mission

- To support and advise the Saskatchewan Round Table on Environment and Economy in the conduct of its tasks.

Activities

- Guide and plan the work of the Round Table to ensure its objectives are met within its limited life.
- Organize and arrange all meetings of the Round Table and its Committees.
- Prepare meeting agenda materials through research, preparation of reports and analysis.
- Liaise with all other Round Table Secretariats in Canada to share experience and reduce duplication of efforts.

Round Table Organization and Meetings

The work of the Round Table is done in three committees:

- the Conservation Strategy Committee;
- the Demonstration Projects Committee; and,
- the Communication/Education Committee.

The committees meet on an equivalent or greater frequency than the Round Table. The Round Table met six times in 1989-90; three meetings were held in Regina and members met once in Prince Albert, Melfort and Saskatoon.

Round Table Accomplishments

- Identified tasks and set terms of reference;
- Established a committee structure to undertake the work;
- Set criteria for the identification and profiling of projects demonstrating aspects of sustainability;
- Set objectives and a process for developing a Conservation Strategy for Saskatchewan; and,
- Began a process for involving interest groups in the work of the Round Table.

Table 5

Saskatchewan Round Table on Environment and Economy Membership, March 1990

Name	Affiliation
Frank Arnie	Saskatchewan Wildlife Federation
Beverly Brennan	Philom Bios Inc.
Doug Chekay	Ducks Unlimited
Chief Roland Crow	Federation of Saskatchewan Indian Nations
Bill Gaynor	Saskatchewan Division of Weyerhaeuser Canada Ltd.
Hon. John Gerich	Associate Minister of Economic Diversification and Trade
Professor Jon Gillies	Faculty of Agricultural Engineering, University of Saskatchewan
Dr. David Henry	Associate Professor of Science, Saskatchewan Indian Federated College
Hon. Grant Hodgins	Chairman, Minister of Environment and Public Safety
Dr. Stuart Houston	Professor of Radiology, Department of Medical Imaging, University of Saskatchewan
Darla Hunter	MacPherson, Leslie and Tyerman
Austin Jagoe	
Sister Phyllis Kapuscinski	Faculty of Education, University of Regina
Hon. Lorne Kopelchuk	Minister of Parks and Renewable Resources
Lindsay Milne	Husky Oil Operations Ltd.
Ken Naber	Reeve, R.M. of Star City
John Nightingale	Cigar Lake Mining Corporation

Research and Special Projects

Canadian Council of Ministers of the Environment

The Canadian Council of Ministers of the Environment (CCME) addresses environmental issues which are common across the country. The minister of Environment and Public Safety is a member of the council. Several department staff members participate in the council's programs as requested by the minister.

The council held its annual meeting in November, 1989, and met in March, 1990 in conjunction with Globe 90, an international conference on sustainable development held in Vancouver.

In March, the ministers adopted the Statement on Interjurisdictional Cooperation on Environmental Matters. The statement provides an important framework for the federal and provincial ministers of the environment to cooperate on environmental matters, and helps to develop specific multilateral and bilateral agreements on environmental protection.

Other important accomplishments of the CCME were:

- Endorsement of a National Packaging Protocol which will lead to a reduction of packaging waste in Canada by 50 per cent by the year 2000.
- A commitment to develop a national regulatory strategy for controlling water pollution from pulp and paper mills across Canada.
- Adoption of the Canadian Memorandum of Understanding on Environmental Emergencies which provides for sharing of resources to respond to an environmental emergency.
- Agreement to examine the energy, transportation and forestry policies and initiatives that have potential to contribute to global warming by creating greenhouse gases.
- Agreement to develop a national action strategy on climate change in cooperation with ministers of energy and other ministries.
- Agreement to review opportunities for increased federal/provincial cooperation in the area of environmental assessment.
- Agreement on a cost-shared program to clean up abandoned, contaminated sites, and to develop technology to assist in site cleanup.

Toxicology Research Centre

The Toxicology Research Centre is a joint undertaking of the University of Saskatchewan and the provincial government. The Department of Environment and Public Safety is the lead agency on behalf of the province.

Activities of the centre relate to research and the provision of advice and analytical services on topics related to toxicology. Areas of interest include agricultural chemicals, quality of drinking water, environmental toxicology and related subjects.

Environmental Protection Division

Mission

To protect and enhance the environment in a manner that promotes the physical, economic and social well-being of the people of Saskatchewan today and in the future.

Activities

Environmental protection activities are concentrated in three branches reporting directly to the assistant deputy minister.

- Air and Land Protection Branch
- Water Quality Branch
- Mines Pollution Control Branch

Air and Land Protection Branch

Objectives

- To prevent air pollution from industrial and other sources.
- To promote rehabilitation of polluted or disturbed lands.
- Management of programs to recycle pesticide containers.
- To preserve and enhance the environment by managing land use activities.
- To reduce the amount of waste requiring disposal by encouraging and assisting the application of 4R initiatives (reduce, reuse, recycle and recover).

Activities

- Issue Approvals to operate in accordance with *The Clean Air Act* for industrial sources, fuel-burning equipment and incinerators.
- Regularly monitor air quality in Regina and Saskatoon. Investigate air quality complaints and encourage industry to reduce emissions of air pollutants to the lowest practical levels.
- Safeguard the physical and living environment in the event of storage or spill of hazardous substances.
- Provide advice on risks to public safety and property in the event of a deliberate or accidental discharge of hazardous substances into the environment.
- Assess degree of contamination of lands as a result of accidental or intentional release of chemicals.
- Encourage waste reduction, recycling, reuse and recovery.
- Regulate environmentally acceptable storage, treatment and disposal of waste to land.
- Identify degradation pathways and potential impacts on the environment as a result of the use of toxic chemicals.

Air Quality Section

Legislation

The Clean Air Act and *Clean Air Regulations* became effective November 1, 1989, and replaced the previous *Air Pollution Control Act* and regulations. The new legislation is expected to further enhance and protect the province's air quality.

The highlights of *The Clean Air Act* and *Clean Air Regulations* are as follows:

- All industries that emit significant industrial and man-made sources of air pollution, including the industries which were previously exempt (prior to January, 1976) under the old legislation, are now required to obtain a Permit to Operate;
- Approximately 400 additional industries are expected to be permitted because of the new legislation;
- An update of the ambient air quality standards to a reasonable and achievable level;
- Prohibited conduct and better control over open burning activities;
- Control orders or specific guidelines related to air pollution control may be issued; and
- Maxiumum penalties of $1 million and/or up to three years of imprisonment.

Industrial Surveillance Activities

During the fiscal year, 30 new permits to operate were issued under the newly enacted Clean Air Act, and 128 permits were renewed. Figure 1 illustrates the growth in the number of permits issued since 1975. Table 1 provides a breakdown of the industrial classifications of the permits handled during the year.

Table 6

Classification of Permits

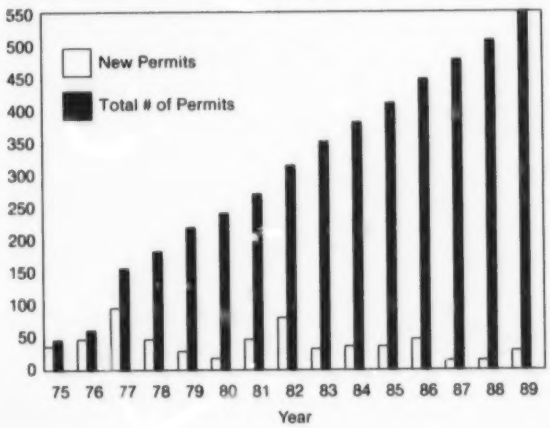
	New	Renewals	Cancelled
Agricultural Chemical Formulating Plants	-	1	-
Anhydrous Ammonia Storage Facilities (Bulk)	-	3	-
Asphalt Plants	2	32	1
Bulk Blending Fertilizer Facilities	-	1	-
Chlorine Packaging Facilities	-	-	-
Chemical Manufacturing	-	-	-
Crematoriums	-	-	-
Gas & Oil Gathering and Treating Facilities	1	19	1
Grain Elevators	17	40	-
Incinerators	6	4	1
Iron/Steel Foundries	-	2	-
Cement/Concrete Manufacturing Facilities	-	3	-
Salt Drying Facilities	2	-	-
Seed Cleaning & Treating Facilities	2	6	-
Oil Refineries	-	1	-
Miscellaneous	-	16	1
Total	**30**	**128**	**4**

Selected major industries are required to monitor emissions and/or ambient air quality near their operations as a result of conditions attached to their permits to operate. The results of these monitoring efforts are submitted to the section for review. For the most part, monitoring results are well within provincial standards and requirements.

Section personnel conduct numerous formal inspections of industries which are under permit. During these inspections, staff members verify whether processes and equipment are operating in the intended/expected manner. Any complaints or problems are discussed and areas for improvement or changes are negotiated. In addition to formal inspections, branch personnel also visit numerous industries and other operations on a random, informal basis. The purpose of these visits is to ensure that appropriate follow-up measures are put in place in those situations where improvements were previously agreed upon.

Figure 1

Industrial Permits Issued 1975-89



Urban Air Monitoring

The section conducts air monitoring in the province to assess present conditions, review long-term trends and evaluate effectiveness of air pollution control equipment. The data collected also enables the section to evaluate air quality complaints and compliance with air quality standards.

At urban air monitoring network centres around Regina and Saskatoon, air quality parameters typically measured may include hydrogen sulphide, sulphide dioxide, ozone, carbon monoxide, oxides of nitrogen, inhalable particulate matter and wind.

Inhalable particulate matter sampling is also carried out in other parts of the province. Results of air quality measurements made during 1989-90 were similar to those made in the previous fiscal year. Air quality can be rated as fair to good. The provincial air quality monitoring data for 1989-90 may be made available from Saskatchewan Environment and Public Safety on request.

In addition to the urban air monitoring program, the Section monitored air quality around the Consumers' Co-operative Refinery/Upgrader in Regina and near the Saskatchewan Power Corporation plant at Poplar River. A number of industries were also required to carry out ambient air monitoring as a condition of their Permit to Operate.

Acid Rain

Saskatchewan Environment and Public Safety is a member of the Western Canada Long-Range Transport of Atmospheric Pollutants Technical Committee. The committee plans and co-ordinates acid deposition research and monitoring programs for Western Canada. An annual report outlining the acid rain activities in Western Canada during 1989 is available from Saskatchewan Environment and Public Safety on request.

The section is participating with the other Western provinces to develop sulphate deposition target loadings for sensitive areas in Western and Northern Canada.

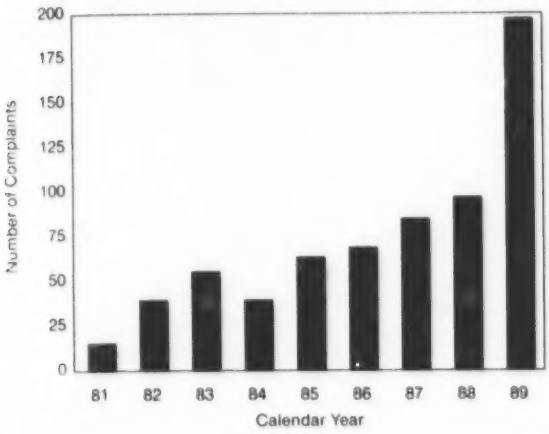
Complaints Investigation

The Air Quality Section received and investigated 243 air quality complaints during the 1989-90 fiscal year. This represents an increase of approximately 130 per cent from the previous year.

The majority of complaints related to odours, smoke and dust in the ambient air. Operational activities of oil refineries, heavy oil upgraders, salt drying plants, asphalt plants, grain elevators, steel foundries and other industrial activities were cause for most of the complaints. In a number of cases, changes to operating procedures were sufficient to resolve the complaint. In certain cases, however, detailed evaluations were necessary before operational or equipment changes could be implemented.

Figure 2

Air Quality Complaints 1981-89



Protection of the Ozone Layer

Legislation dealing with the protection of the ozone layer has been drafted. The proposed act, Ozone Depleting Substances Control Act, is expected to be finalized by the end of the calendar year. The legislation will enable the department to control and phase out chlorofluorocarbons (CFCs) and halons.

Waste Management Section

Spill Response and Control

Saskatchewan Environment and Public Safety is responsible for the enforcement of the Environmental Spill Control Regulations which are designed to safeguard the environment in the event of a spill. The regulations require that spills of pollutants be reported immediately to the department's Spill Report Centre to ensure proper containment, clean up and disposal of contaminated material.

Spill Report Centre personnel are available 24 hours a day. When a spill is reported, personnel determine if adequate measures have been taken to clean up the spill and may also provide advice and/or instructions on further work if required. The spill team is equipped to make on-site inspections, determine if appropriate actions are being taken, and to advise on disposal requirements.

During the year, the Spill Report Centre received approximately 1,200 calls. Two hundred and seventy-three of the calls were to report spills which classified under the Environmental Spill Control Regulations. In addition, the Spill Response Team dealt with numerous complaints and requests for information regarding chemical handling and disposal, transportation of dangerous goods, environmental manifests and indoor air quality.

Table 2 summarizes the number of spills reported, the product and the total volume spilled.

Table 3 illustrates the cause of the spills correlated with number of occurences and volumes of product spilled.

Table 7

Spill Statistics by Cause, Number of Incidents and Quantity

Cause	Number of Incidents	Quanitity (litres)
Transportation (truck, railway, etc.)	39	168,280
Handling	33	24,871
Equipment Failure	79	2,358,466
Above-ground tanks (overflows)	54	189,883
Below-ground tanks (line leaks)	36	4,174,860
Miscellaneous (lightning, vandalism, unknown)	32	3,979,198
Total	**273**	**10,895,558**

Table 8

Spill Statistics by Product, Number of Incidents and Quantity

Product Spilled	Number of Incidents	Quanitity (litres)
Petroleum Products		
Asphalt	9	53,872
Crude Oil	11	2,520,924
Diesel	40	89,020
Heating Oil	3	5,210
Gasoline	57	230,533
Transformer Oil (5 ppm)	11	1,723
Used Oil	1	110
Other	11	50,616
Subtotal	**143**	**2,952,008**
Non-Petroleum Products		
Acid	3	23,307
Fertilizer	11	27,401
Industrial Chemical	18	198,698
Industrial Waste	13	513,414
PCBs	52	749
Pesticides	8	512
Radioactive	10	2,100,135
Sewage	12	5,079,180
Other	3	154
Subtotal	**130**	**7,943,550**
Total	**273**	**10,895,558**

Litter Control Act

The collection of aluminum cans and plastic bottles for recycling through the Saskatchewan Association of Rehabilitation Centres (SARC) depot system continued and expanded during the year. By years end the SARC system had grown to 55 depots employing about 145 persons. Approximately 135 of these employees were handicapped. Returns of the cans and bottles continued to exceed expectations. Return rates for the year for the cans and bottles were 70 per cent and 55 per cent, respectively.

Municipal Waste Reduction

Public conern with the amount of municipal waste requiring disposal continued to escalate during the year. As a result, the branch was called upon to respond to many requests for information and assistance in waste reduction.

National Packaging Protocol

In April, 1989, the then Canadian Council of Resource and Environment Ministers (CCREM) - now the Canadian Council of Ministers of the Environment (CCME) - adopted a national goal of reducing waste generation by 50 per cent by the year 2000. At the same time, the ministers recognized that packaging waste accounts for a significant portion of total waste. Thus, the Ministers directed their Waste Management Committee to develop a national packaging policy aimed principally at reducing packaging waste.

A multi-stakeholder National Packaging Task Force was formed under the aegis of the Waste Management Committee and given the task of developing the national packaging policy. Government, industry and consumer/ environmental groups were represented on the task force. The branch has represented

Saskatchewan on the task force since it first convened in June, 1989. The task force activities resulted in a National Packaging Protocol which contains six packaging policies and milestone targets for packaging waste reduction. The National Packaging Protocol was endorsed by CCME at its meeting held in Vancouver on March 20, 1990, and implementation of the protocol is currently underway.

Industrial and Hazardous Wastes

Industry, commercial operations, the general public and government agencies all produce hazardous wastes which, if not managed properly, can have a negative impact on the environment and public safety. The department is responsible for promoting and ensuring proper waste handling and disposal techniques.

Public and industrial groups concerned about the state of the environment have prompted affected parties to find the most economical and environmentally suitable methods for the disposal of their hazardous waste. The department has responded to this concern by actively advocating the 4 Rs of waste management. These include reduction, reuse, recovery and recycling of waste material. The 4 Rs are an extremely important method of waste management for Saskatchewan as the province lacks any permanent disposal sites for materials other than asbestos and PCBs. If the 4 Rs of waste management cannot be utilized, the only disposal facilities available are located out of province and this tends to be very costly.

Typical public and industrial concerns are with respect to the disposal of waste materials such as flammable solvents, cyanide solutions, arsenic, mercury and silver compounds, asbestos, industrial chemicals and PCBs.

The Industrial and Hazardous Waste Unit dealt with hazardous waste management inquiries from the public, industry and other government agencies and in so doing:

- Dispensed information on the proper storage, transportation and disposal methods for industrial and hazardous wastes.
- Outlined possible 4R waste management techniques for certain waste streams.
- Provided technical advice on environmentally sound industrial practices.
- Investigated complaints about the inappropriate disposal of hazardous waste.
- Evaluated technical projects aimed at remediating hazardous waste sites and reducing or eliminating environmental and public safety concerns.
- Oversaw the movement of PCBs to the provincial storage site.

The range of inquiries was quite diverse and ranged from explosives disposal to disposal of radioactive materials. On average the unit dealt with twenty inquiries per day.

Hazardous Waste Regulations

Waste Dangerous Goods Regulations have been drafted and currently are under review. Subsequent to this review by government agencies and the public, these regulations, once implemented will provide uniform guidelines and requirements for all individuals involved in the generation, storage, transportation or disposal of waste dangerous goods (hazardous wastes). The proposed regulations will assure proper citing and operation of storage and disposal operations as well as deterring improper disposal methods for waste dangerous goods.

Reclamation of Industrial Sites

There are more than 13 industrial sites which have remediation work either underway or awaiting finalization of reclamation procedures. The reclamation work involved either controlling the pollutant, so as to stop its spread into the environment, or completely destroying the pollutant. The majority of these sites became contaminated because of the owners' lack of understanding about the consequences that the pollutant would have on the environment.

Industrial Surveys

In order to better understand waste management practices currently in use and to provide relevant information to the pertinent industrial sectors, a survey of the wood treating industry was undertaken. The survey included waste audits on 13 operations.

The survey was aimed at identifying the types of wastes that the wood treating industry produced, and the management practices used that could have a detrimental effect on the environment. Once these waste streams were identified, the 4Rs of waste management were applied to produce a management program which protects the environment and is not dependent on an out of province solution.

Recycling Directory

Due to the large number of requests from industry concerning the availability of immediate disposal techniques for waste that is currently stockpiled, the department has established a waste directory exchange. Development of the waste exchange guide involved contacting over five hundred businesses and services and obtaining information on the types of wastes they currently have and the types of waste streams that have the potential to be used in their process. This approach is an excellent mechanism for waste management practices to be adopted through the recycle-reuse philosophy. Although in its infancy, the program has already found reuse opportunities for over 10 metric tonnes of waste.

PCB Management

The provincial PCB Waste Storage Regulations, pursuant to Section 38 of *The Environmental Management and Protection Act,* came into force on April 11, 1989. These regulations give the department jurisdiction over non-federally regulated PCB storage sites in order to ensure that PCB wastes are managed and stored in an environmentally secure manner within Saskatchewan.

By January 1, 1990 these regulations affected 98 storage sites. Because PCB material continues to be taken out of service or decontaminated or delivered to the provincial storage facility, the number of storage sites is not static. It is intended that compilation of the semi-annual inventory reports, which are required by the PCB Waste Storage Regulations, will provide a means of monitoring this fluctuation. To aid in the compilation, the department has installed Environment Canada's National PCB Inventory for Saskatchewan on its computer system and has worked cooperatively with the federal department to update and maintain it for provincially regulated sites. The department attempted to use the January 1, 1990, reporting requirement as an opportunity to educate the owners of PCB materials as to the intent of the regulations and to March 31, 1990, had obtained approximately 90 per cent compliance with the regulations.

The provincial PCB storage facility began operating at Boundary Dam in March, 1989. Storage buildings continue to be built at the site to accommodate PCB equipment and contaminated materials from provincially and federally regulated sites in response to the department's commitment to consolidate Saskatchewan's PCBs. To March 31, 1990, 2,123 containers/items had been delivered to the site. It is intended that any PCBs in storage as of April,1989 be either decontaminated or consolidated at the facility by April, 1991 within the regulation's two-year limit.

Each year more than 600,000 litres of mineral oil contaminated with low levels of PCBs are decontaminated by companies operating in Saskatchewan under the approval of the department.

Transportation of Waste Dangerous Goods

The objective of *The Dangerous Goods Transportation Act* (DGTA) and regulations is to promote public safety in the transportation of dangerous goods through the application of nationally uniform legislation. The act and regulations are administered by Saskatchewan Highways and Transportation, except when the consignment is a waste dangerous good. For dangerous wastes, the Department of Environment and Public Safety has jurisdiction. The department deals with registration of waste generators, carriers and receivers. This registration process ensures that the waste material is transported and disposed of in a proper manner.

A substantial effort was expended over the last year to verify that waste dangerous goods were being transported and disposed of in a manner that would cause no environmental damage. This added effort also discouraged the initiation of

chemical dumps or drop off sites, which tend to develop into abandoned sites. The added emphasis on transportation issues resulted in a substantial number of registrations, along with an increase in volumes of waste dangerous goods being transported in compliance with the regulations.

Table 9
Waste Dangerous Goods Transportation Registrations

	1989-90	1988-89	1987-88	1986-87	Total
Waste Generators	239	48	39	41	376
Waste Carriers	15	27	27	16	91
Waste Receivers	20	16	6	11	51

Table 10
Volumes of Waste Dangerous Goods Transported (metric tonnes)

	1989-90	1988-89
Inter-provincial	406	341

Municipal Waste Landfills and Liquid Waste Haulers

The Municipal Refuse Management Regulations, which were enacted in 1986, pertain to the establishment and operation of municipal refuse disposal grounds in the province. A regulatory process was developed to ensure the environmentally sound citing, development, operation and monitoring of such facilities. The activities of the department in this respect are summarized in the following table.

Table 11
Municipal Landfill Activities

Applications Received	17
Authorization to Establish Facilities Issued	17
Permits to Operate Issued	61
Landfill Site Closures	3
Complaints Received	119
Inspections	295
Bylaws Reviewed and Approved	16

The Municipal Refuse Management Regulations also require that all persons or companies involved in the business of transporting and disposing of liquid domestic wastes obtain a permit from the department. A total of 222 permits have been issued.

Transportation of Dangerous Goods

The Transportation of Dangerous Goods Act (TDGA) and regulations are designed to promote public safety in the transportation and handling of dangerous goods. The department's role is to register all parties involved in the movement of hazardous waste and to ensure compliance with the legislation in the transport of the waste to treatment or disposal facilities.

Communication is maintained with other provincial jurisdictions regarding interprovincial waste movement. Registration activities are outlined in the following table.

Table 12
Transportation of Dangerous Goods Registrations

	1988-89	1987-88	1986-87	Total
Waste Generators	48	39	41	139
Waste Carriers	27	27	16	78
Waste Receivers	16	6	11	37

Pesticide Container Disposal Program

There are over one million pesticide containers sold in the province annually. Surveys conducted by the Saskatchewan Safety Council in 1981 and 1982, showed that a large number of these containers were not disposed of properly.

In response to numerous requests from concerned groups, the Pesticide Container Disposal Program was initiated in 1983. Approximately 70 per cent of rural municipalities took advantage of the program the first year with the establishment of 170 sites. In a number of cases, urban and rural municipalities joined forces to provide appropriate and accessible sites.

The number of sites in the province has increased since the first year to a number now totalling 273 sites. During 1989-90, the number of containers collected at the sites totalled 728,000, with 129 barrels of residue recovered for proper disposal.

Chemical Management Section

The Chemical Management Section expanded its scope of responsibilities and staffing level during the 1989-90 fiscal year. The growth of the section is attributed to the proclamation of the Hazardous Substances Regulations, which became effective on April 1, 1989, and the development of a new department initiative, the Agricultural Chemical Collection Program (ACCP). Two administrative units were created within the Chemical Management Section to implement the new regulations and develop the operational plans and logistics for the ACCP: the Chemical Safety Unit and the Fuels and Industrial Chemicals Unit.

Staff members continued to serve on organizations such as the Canadian Council of Ministers of the Environment (CCME), the National Task Force on Leaking Storage Tanks, the Canadian Association of Pesticide Control Officials, the Biomedical Waste Disposal Steering Committee and the Saskatchewan Advisory Committee on Insect Control.

Chemical Safety Unit

The Chemical Safety Unit was established as one of two units within the Chemical Management Section during September, 1989. The overall objective of the unit is to promote, enhance and enforce the sound management and handling of chemical substances as a means to ensure the continued protection of people, property and the environment. The unit's activities during the latter half of the fiscal year included the following:

Hazardous Substances Regulations

The Hazardous Substances Regulations, which were announced in 1988, came into effect on April 1, 1989. The regulations provide greater control over the storage of a wide variety of hazardous chemicals within the province. The Chemical Safety Unit assumed responsibility for administering and enforcing regulations for the agriculture, warehousing, manufacturing, mining, chemical industries and a variety of other sectors which store hazardous chemicals. The unit administers and enforces the regulations for approximately 950 of the chemical storage facilities which had registered with the department by the end of the fiscal year. Preliminary statistics for registered storage facilities governed by the regulations are presented on Table 13.

Administrative activities during the first year included facility registration and a public information campaign to introduce and familiarize those affected with the immediate and pending requirements of the new regulations. The unit's activities during the next year will focus on storage site compliance audits and liaison with industry to review and re-evaluate a comprehensive set of procedures and guidelines for the storage or warehousing of hazardous substances.

Agricultural Chemical Collection Program

The Agricultural Chemical Collection Program (ACCP) was a new initiative for Saskatchewan Environment and Public Safety during the 1989-90 fiscal year. The Chemical Safety Unit was responsible for the development, planning and future operation of the program. Three new temporary staff members joined the unit during the year to assist with the development and implementation of the three year program.

The Agricultural Chemical Collection Program was developed to provide a solution to the problem of long-term storage of antiquated, deteriorated or damaged pesticides at farms and rural municipal facilities across the province. Continued storage of these chemicals without a practical means for environmentally sound disposal could pose a potential health, safety and environmental hazard. Fully trained unit staff, with the assistance of R.M. officials and other agencies, will receive the agricultural chemicals at mobile collection depots. It is anticipated that the program will serve all areas of the province within the next three years.

Chemical Information Service

The unit assumed responsibility for information services to the public, industry and other government agencies under the Chemical Information Service. During 1989-90, the unit handled approximately 550 inquiries regarding the toxicity, handling and storage of a wide variety of chemical substances. The unit remains committed to providing the most accurate and recent information by updating the reference library on an ongoing basis.

Small Quantity Chemical Collection

The Chemical Safety Unit continued to provide the services of the former Institutional Chemical Collection Program (ICCP) on an informal basis to schools across the province. During the 1989-90 fiscal year, 81 schools were serviced with approximately 5,387 kg of laboratory chemicals being collected and disposed of in an environmentally sound manner. The Chemical Management Section will review the need for re-initiating the program during the next fiscal year due to the continuing demand for its services.

During 1989-90, members of the Chemical Management Section provided technical support for the Regina Household Hazardous Waste Collection Event. Approximately 45 barrels of hazardous household wastes were collected from 600 participants during two consecutive Saturdays in early June. This, the second such event for the city, was considered a success and will serve as a model for other communities in the province that wish to deal with these types of wastes in a sound manner. Next year staff members will continue to promote and provide technical support for these types of events.

Fuels and Industrial Chemicals Unit

The Fuels and Industrial Chemicals Unit was established in September, 1989. Their objective is to ensure safe storage of fuels and other industrial chemicals through the effective administration and enforcement of the Hazardous Substances Regulations.

The primary responsibility of the unit is to ensure that regulatory compliance for fuel storage facilities is met. Included in regulatory compliance are: service stations, bulk plants, cardlocks and keylocks, transportation facilities,distribution facilities and other storage facilities that handle fuels relating to petroleum products.

As of year end, there were 2,848 registered facilities, of which approximately 1,700 were petroleum product storage facilities. Statistics for these facilities are included on Table 13.

The focus of activities during the report period was geared towards completing the registration process as efficiently as possible. This objective was met, as approximately 90 per cent of the major stakeholders are registered in the province.

An information program for the public was completed late in the fiscal year. Meetings in 16 different centres around the province attracted over 700 registrants. The meetings provided staff with an opportunity to familiarize clients with program requirements and long-term upgrading requirements.

Developmental work is ongoing in an effort to refine and enhance the Hazardous Substances Regulations, by amending them as required, and by producing support materials in the form of guidelines and standards.

Table 13

Hazardous Substances Regulations - Registered Storage Facilities by Industrial Sector:

Agricultural Industry	723
Bulk Plants	379
Cardlocks	42
Chemical Industry	13
Distributing	4
Manufacturing Industry	17
Mining Industry	21
Service Stations	1,246
Transportation	41
Warehousing	6
Others	356
Total	**2,848**

Water Quality Branch

Objective

- To protect and enhance Saskatchewan water quality.

Activities

- Establish water quality objectives and guidelines for surface water and groundwater.
- Establish guidelines and standards for water and wastewater works, license construction and operation, and enforce standards.
- Investigate and evaluate water quality concerns, trends and issues.
- Monitor and inspect water and wastewater works to determine compliance with standards and guidelines.
- Manage and report provincial water quality data.
- Communicate with agencies and the public by providing information and advice on water quality matters.
- Identify and consult on water quality research needs.
- Regulate chemical and biocide use in and near surface waters.
- Coordinate a certification and training program and provide technical assistance to the owners and operators of water and wastewater works.
- Work with other governments to monitor and protect transboundary water quality.

Municipal Assessment and Certification Section

Municipal Inspections

Eight regional environment offices were in operation during 1989-90, located in Estevan, Swift Current, Kindersley, Regina, Melville, Tisdale, Watrous and North Battleford. Regional staff conducted over 1,000 inspections of municipal water and sewage works and over 100 additional visits to provide technical operating assistance and to follow up on corrective measures.

Monitoring Support Programs

The branch administers a Municipal Analysis Program (MAP) to assist communities in monitoring required by Minister's Orders and Permits. The program assists with the costs of analyzing the quality of municipal drinking water and wastewater and the quality of streams receiving treated wastewater discharges.

During 1989-90, over 14,000 samples were submitted to Saskatchewan laboratories for analysis of bacteria, general chemistry, health and toxicity parameters and biocides.

Operator Training and Certification

Section staff, assisted by external instructors, presented 16 information and skill-training workshops to municipal water and wastewater works operators throughout the province. Total workshop attendance in 1989-90 was 301.

An international workshop on lagoon operation was presented by branch staff in Glasgow, Montana, at the invitation of the Montana State Department of Health and Environmental Sciences. New workshops on operator safety and well operations were introduced this year.

The branch administers a voluntary Operator Certification Program, based on guidelines established by the Association of Boards of Certification. An Operator Certification Board, appointed by the minister, oversees the program operation. There were 230 certified operators for water and sewage works in 1989-90.

The quarterly branch publication "Clear Water Reporter", had an average circulation of 1,700 during 1989-90.

Standards and Approvals Section

Regulation of Municipal Water and Wastewater Works

The department regulates all works with a capacity of 18 or more cubic metres per day. During 1989-90, the branch issued over 100 Minister's Orders for waterworks, and 60 permits for sewage works. The section also completed over 175 approval notices for construction of works. At the end of the fiscal year, there were 574 licensed waterworks and 479 licensed sewage works in Saskatchewan.

The branch worked with several communities during the year to achieve upgrading of sewage treatment facilities. The Cities of Saskatoon and Prince Albert and the Town of Nipawin have made commitments to construct secondary treatment facilities over the next three to four years in order to comply with the Water Pollution Control and Waterworks Regulations.

The control of point-source phosphorus loadings in the QuAppelle Basin improved during 1989-90 with the implementation of phosphorus removal at the Echo Valley Conference Centre sewage works. The City of Regina initiated new procedures to optimize the operation of existing phosphorus control facilities.

Regulation of Industrial Effluent Works

Industrial operations (excluding mining) require a permit from the branch which authorizes them to construct, alter, extend or operate effluent works. During 1989-90, 14 permits for construction and operation of works were issued to industry. Industrial clients are required by permit to monitor effluent quality and the quality of waters receiving effluent discharges. During 1989-90, over 3,800 samples were collected, analyzed and reported to the department.

The branch had a representative on a federal-provincial working group to develop new federal pulp and paper effluent regulations, expected later in 1990. Staff also participated in detailed E.I.A. reviews of proposed new pulp mills at Meadow Lake and Nipawin.

Work at the Co-op/Newgrade Refinery and Upgrader site was conducted to evaluate wastewater treatment systems and groundwater contamination and to identify remedial measures.

Branch staff represent Saskatchewan on the I.J.C. Poplar River Bilateral Monitoring Committee. Environmental monitoring data pertaining to the operation of the Poplar River Power Station was evaluated. The branch also worked with SaskPower in evaluating water quality deterioration in Boundary Reservoir caused by drought conditions and station operations. Remedial measures to improve the City of Estevan's drinking water supply and eliminate ash lagoon discharges will be implemented in 1990.

Drinking Water Quality

The branch represents Saskatchewan on the federal-provincial sub-committee on drinking water which is responsible for establishing and updating the Canadian Drinking Water Quality Guidelines. A strategy and work plan was prepared to revise the Saskatchewan Municipal Drinking Water Quality Objectives in accordance with new Canadian guidelines during the next fiscal year.

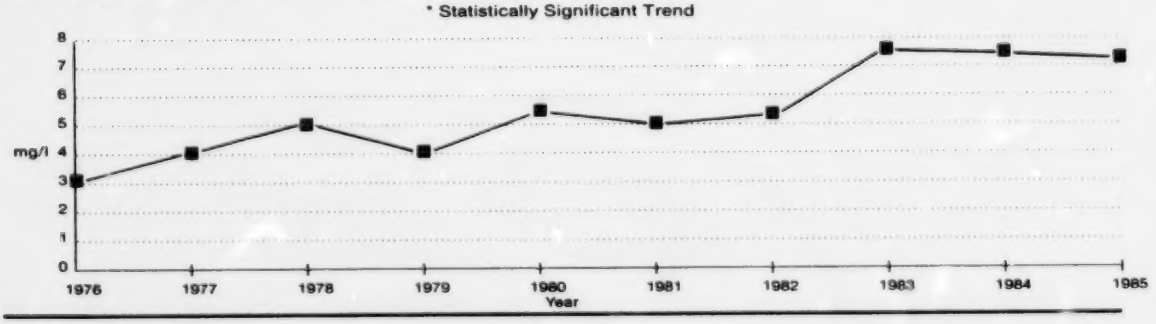
Water Quality Management Section

Surface Water Quality Monitoring

The branch monitors water quality in major river basins on a regular basis to measure changes over time and to evaluate the effects of wastewater discharges and other pollution sources and the success of regulatory controls. During 1989-90, section staff evaluated the results of over 750 samples which were collected from the Souris, QuAppelle, North Saskatchewan, South Saskatchewan, Saskatchewan and Churchill River basins.

Figure 3

Chloride Trends of South Saskatchewan River - Outlook, Sask.



Mixing zone studies were conducted in the North Saskatchewan River at North Battleford and the South Saskatchewan River at Saskatoon to evaluate the dispersion and mixing characteristics of several municipal sewage and industrial wastewater discharges. The results were compared to the mixing zone guidelines published by the department in 1989.

Biocide Regulation

The branch issues permits and provides technical advice for the use of chemicals in or near surface waters. One hundred and seventy-seven permits were authorized in 1989-90, mainly for control of nuisance aquatic plants and algae, mosquitoes and blackflies. Staff continued to promote non-chemical control alternatives including mechanical weed harvesting and the use of biological agents for biting fly control.

Data Management

The branch manages a mainframe and micro-computer base data system for all Saskatchewan surface water, groundwater, drinking water and wastewater quality data. Staff provided data retrievals and analysis in support of branch and department programs and also handled over 80 data requests from external clients.

In 1989-90, the Works Information Data system (WINDAT) was transferred from mainframe to an in-house micro-computer. This system provides information required from the regulation of water and sewage works and for operator training and certification.

Transboundary Water Quality

Branch staff participated on several inter-agency committees responsible for monitoring water quality and establishing water quality objectives on inter-provincial and international rivers. During 1989-90, the Prairie Provinces Water Board Committee on Water Quality developed site-specific water quality objectives for 11 inter-provincial rivers. The Souris River Bilateral Monitoring Group was established under a Canada-U.S. agreement to develop objectives and monitor water quality in the Souris River at the two international boundary crossings. The section participated in a water quality investigation of the Battle River in cooperation with the Alberta Environment Department and Environment Canada.

Saskatchewan River

A report on an intensive water quality study of the river near Nipawin conducted between 1985 and 1989 was completed and published. The study showed effluent discharges caused bacteria levels in the river to exceed objectives for recreational use. Low summer dissolved oxygen levels caused by the hydroelectric development were measured in the river which could affect fisheries and wastewater assimilation capacity. Schedules to improve wastewater treatment have been negotiated with the dischargers. SaskPower has been directed to carry out additional evaluation of dissolved oxygen conditions in the river and reservoir.

Regina Groundwater Project

The branch coordinated the second year of a three-year project to develop an aquifer protection plan. Reports on chemical use and distribution in the aquifer region and on aquifer sensitivity mapping were completed. A contract was awarded for the development of a groundwater movement and contaminant transport model for the Condie aquifer.

Mines Polution Control Branch

Objectives

- To ensure short and long-term protection of the environment at mining and milling operations.
- To protect the public from naturally occurring radiation hazards.

Activities

- Licensing; to issue and administer approvals to operate or ministerial approvals to mining companies.
- Inspections and monitoring; to routinely inspect mining operations and collect samples to determine compliance with license conditions and provincial regulations.
- Data handling; to review and analyze all environmental data related to the mining industry.
- Regulation development; to develop and update provincial regulations related to the mining industry.
- Radiation surveys; to conduct surveys to monitor areas where the public exposure to naturally occurring radiation is a concern.
- Abandoned mines remedial action program; to identify abandoned mine workings of hazard to the public safety and to the environment, and to initiate remedial action to reduce or eliminate the hazards.

Uranium Mines Section

The Uranium Mines Section is responsible for licensing, monitoring and inspecting all uranium and gold mining operations in the province. Staff visit the sites to perform inspections and take samples in and around the operations. Compliance water sampling at the sites resulted in more than 6170 separate water quality analyses being performed from 31 water quality monitoring locations. Approvals to construct and to operate the facilities are administered by the branch. In addition, companies are required to monitor all aspects of the environment on a regular basis and submit the data to the department. This monitoring data resulted in more than 40,000 separate water quality analyses being performed from approximately 280 different surface and ground water sample locations. Additional monitoring requirements include fish, sediments, macrophytes, air quality, and other biological media. The public has access to all licenses issued and the monitoring data.

The Uranium Mines Section is also responsible for administering the abandoned mines remedial action program.

Amok, Cluff Lake

Amok commenced mining and milling operations in 1980. During 1989, the company actively mined the Dominique Peter underground mine, completed the mining of the Claude open pit mine and commenced the mining of the Dominique Janine open pit mine. In June the mining of the Claude open pit mine was completed. Dewatering of the open pit continued until October, until which time the dewatering pumps were removed and the pit was allowed to flood.

Permit to Operate Industrial Effluent or Sewage Works #MPCO-21 and Minister's Order for the Operation of Waterworks MPCMO-8 were issued on May 3, 1989. Amok operated and adhered to all the requirements of these permits during 1989. The Amok, Cluff Lake mine site was inspected 12 times during 1989. The 15 water samples collected generated approximately 600 individual analyses for metals, radionuclides, nutrients, and major ions. None of the 12 compliance monitoring samples collected at the final point of control on the effluent treatment system had individual parameters over specified regulatory limits. At no time during the term of the license were the effluent quality guidelines exceeded by the company.

Denison Mines Limited

Denison Mines Limited received the necessary approvals in September, 1988, to develop an underground test mine on South McMahon Lake. Development of the vertical shaft was completed in June, 1989. Cross-cut and blind boring testing were completed by the end of October. During the cross-cut development bad ground and significant inflows of groundwater to the workings slowed mine development. Although contaminated inflows were larger than expected, the company was able to treat and discharge waters that met effluent quality discharge limits.

Upon the completion of test mine development, the mine workings were allowed to flood. The company was issued Permit to Operate Effluent or Sewage Works MPCO-19 and Minister's Order for the Operation of Waterworks MPCMO-11. At no time during the test mining did the company exceed the effluent quality limits of the permit.

During the year, eight monthly inspections of the Denison Midwest Joint Venture were conducted. During the inspections, 10 compliance monitoring samples were collected that generated approximately 400 individual analysis for metals, radionuclides, nutrients and major ions.

Cameco-Beaverlodge Decommissioning

Camecos Beaverlodge operation near Uranium City has completed its fourth full year of transition phase environmental monitoring since the completion of the decommissioning work at the site. No remedial work was required on the reclaimed area for 1989.

Branch staff inspected the site six times during the fiscal year collecting 28 compliance water quality samples from eight monitoring stations. A total of 1,008 water quality analyses were performed.

Cameco - Key Lake Operation

The Key Lake Operation mining and milling facility completed its sixth year of operation on October 20, 1989. Permit to Operate Industrial Effluent or Sewage Works #MPCO-22 and Minister's Order For The Operation of Waterworks MPCMO-9 were issued on May 31, 1989. The company continues to operate and adhere to the requirements of these permits.

No major modifications or changes were made to the facilities during the fiscal year. The company has completed mining of the Gaertner ore body. Construction activities for the development of the Deilmann ore body include the removal of overburden and the continued operation of the groundwater dewatering system. Mining of the Deilmann ore body commenced in 1988, and is expected to run until approximately 1999. The company continued to operate a batch liquid effluent discharge system in order to monitor the quality of the effluent prior to discharge to the environment.

The branch conducted 12 inspections during the fiscal year. Eighteen compliance water quality samples were taken at two different stations and 648 analyses were completed.

Vista Mines

During 1989, the company was issued Permit to Operate MPCO-20. The permit was issued for a six month period and reflected the company's plans to process 35,000 tonnes of ore. The operation was inactive for the last half of 1989.

During the fiscal year the branch carried out nine site inspections. A total of 15 water samples were collected from three sites and analysed for 690 parameters.

Cameco - Rabbit Lake Operation

A Permit to Operate Industrial Effluent or Sewage Works #MPCO-24 and Minister's Order for the Operation of Waterworks MPCMO-12 were issued on June 28, 1989. In the 1989-90 fiscal year, mining, ore removal and stockpiling continued at the Collins B-Zone. Ongoing geo-technical monitoring of the Collins Bay dyke continued to confirm the stability of the structure. The mill was shut down on June 18, 1989, for the remainder of the fiscal year. Mill maintenance and improvements occurred during the shut-down.

Construction of surface facilities at the Eagle Point mine site took place. Development of the test mine included the portal, access ramp, and approximately 38 meters of decline. The A & D zones remained relatively inactive.

On November 6 - 7, 1989, approximately 1,925 m^3 of contaminated mine water escaped from a cracked pipeline valve and was released to Collins Creek. MPCB staff were at the site from November 7 - 21, investigating the spill and conducting follow up monitoring. MPCB commissioned an independent consultant to investigate the spill and report what effects the spill may have had on the ambient environment. The consultant's report and MPCB's investigation findings released in December, 1989, concluded that no detrimental effects to the environment occurred and recommended the company conduct additional sediment and fish monitoring of Collins Bay.

As a result of the spill, the company's operating license was amended on February 22, 1990, to include conditions regarding modifications, additional inspections, and an annual requirement to review and evaluate spill containment and surveillance procedures. The company was also required to conduct its own investigation on the incident and submit to MPCB a report on the results.

Monitoring of the effluent at the final point of control confirmed that all license conditions with respect to effluent limits were met.

During 1989-90, there were 12 branch environmental inspections. Thirty-three compliance water quality samples were collected from 10 different locations and 1,216 separate analyses were performed.

Cameco - Star Lake Operation

The Ministerial Approval MPCO-23 and Minister's Order for the Operation of Waterworks MPCMO-10 issued to Cameco expired on February 28, 1990. At this time the Star and Fork operations were combined in what is now known as the Cameco-Jasper Operation. Ministerial Approval MPCO-28 and Ministers Order for the Operation of Waterworks MPCMO-16 were issued for this combined operation.

Milling of the Star Lake operation ore reserves was completed in June, 1989. The mill facility was then placed in a temporary shut down mode awaiting the final outcome of the Fork/Transom development proposals. Decommissioning of the Rush Lake Zone and 21 Zone mines were completed during 1989. The Star Lake site operated their tailings effluent treatment system from May to the end of October, 1989. The sprinkler discharge system was utilized in the T2 and T3 muskeg areas for effluent treatment/ polishing. All license limits were met for the final discharge to David Creek in 1989.

The branch carried out 12 site inspections during the fiscal year. A total of 13 compliance water quality samples were collected from five sites and 468 analyses were completed.

Cameco - Fork Lake (Jasper) Operation

The Ministerial Approval MPCO-16 issued to Cameco expired on February 28, 1990. At this time, the Star and Fork operations were combined in what is now known as the Jasper Operation. Ministerial Approval MPCO-28 and Minister's Order for the Operation of Waterworks MPCMO-16 were issued for this combined operation. Modifications to the Star Lake mill were completed in 1989. As well, upgrading of the Blindman Lake Tailings to accommodate the additional tailings from the proposed Jasper Operation were completed.

During the 1989 fiscal year the branch carried out 12 site inspections. A total of two compliance water quality samples were collected and analysed for 72 parameters.

Claude Resources Inc. - Seabee Project

This property, located approximately 120 km northeast of La Ronge remained relatively inactive during the 1989-90 fiscal year. On October 6, 1989, Ministerial Approval MPCO-25 was issued to Claude Resources Inc. allowing underground exploration activities under the Phase II development plan. The approval was amended in January, to allow extension of the decline and removal and storage of ore and waste rock (Phase III) which was completed in March, 1990. The site was maintained in a "mothball state" for the remainder of the year.

During the 1989-90 fiscal year there were six branch inspections conducted. Four compliance water quality samples of the minewater discharge were collected and 163 separate analyses were performed.

Corona Corporation - Jolu Project

Operating Permit MPCMO-18 was issued to Corona Corporation on October 17, 1988. The permit was issued to cover the operating period from October 17, 1988 to February 15, 1990.

Corona Corporation sucessfully operated their gold mine and mill complex during 1989. Mill tonnage through put averaged 500 tons per day. The company identified a need to treat their mill effluent waters for high concentraitons of copper. A water treatment plant was constructed and operated successfully. The company requested approval to use a wetland area adjacent to the tailings management area to polish the effluent from the water treatment facility for further copper removal.

Approval was granted in September, 1989, to use the wetland as a polishing area for treated effluent discharge. Studies conducted in the wetland prior to and after the effluent water was discharged to the area indicated that there was very little impact. The Corona site was inspected twelve times during 1989. The seven water samples collected generated approximately 300 individual analyses for metals, nutrients, major ions and cyanide. At no time during the term of the license were the effluent quality guidelines exceeded by the company.

Cigar Lake Mining Corporation

Development of a test mine for the Cigar Lake orebody continued throughout the year. The company obtained construction permits MPCC-22 and MPCC-24 for construction of a dump wall extension and runoff collection sump at the head frame, and for an emergency containment (contingency) pond adjacent to the minewater treatment plant. Work was satisfactorily completed. A new operating permit MPCO-26 was issued on January 23, 1990, accompanied by Ministers Order MPCMO-14 for the operation of Potable Water Works.

The shaft was deepened to 480 meters by the end of March 1990. Development was started at the 420 meter level (above the ore body) and was scheduled to start at the 480 meter level (below the ore body) in April. Water flows were controlled to less than seven litre per second average over the year, by intensive grouting. The treatment plant was converted to flow through mode and ran every two or three days at about 40 per second to treat accumulated water. There were no effluent excursions, and no spills during the year. The Cigar Lake Mining Corporation reviewed their spill contingency plans to ensure adequate spill protection was in place.

The branch conducted 12 inspections during the year. Eleven compliance or ambient water samples were taken and 605 analyses were completed.

Abandoned Mines Remedial Action Program

A remedial action program for the abandoned mines present in the province was developed and initiated in May, 1988. In February, 1989, a full-time mines inspector was hired by the branch to implement the abandoned mines remedial action program.

The program has identified and priorized remedial work on more than 500 abandoned mines, eight of which have tailings areas, located throughout the province.

During the summer of 1989, a comprehensive field program was completed. The status of all abandoned mines in the province was completed through contact with local councils, landowners, local residents and field investigations conducted on many of the sites. Remedial work eliminated hazardous situations at 17 locations utilizing 12 different contractors.

The work plan for the next fiscal period involves the following elements:

- continued intensive field inspection program of abandoned coal mines in Saskatchewan to check for land subsidence;
- follow-up inspections on previous remedial work done to identify any further problems that might develop;
- raise the awareness of the hazards of abandoned mines through newspaper ads and discussion with local interest groups;
- undertake remedial work on abandoned mines in the Uranium City area;
- decommissioning of the abandoned Lorado uranium mill near Uranium City; and,
- a publication of an annual report summarizing all information relevant to the program.

Technical Services Section

In early 1986, a Technical Services Section was established to ensure that all specialized technical needs of the branch are provided. Because of the complex nature of mining operations and environmental protection at mines, necessary expertise is provided in a wide range of disciplines including radiation, industrial chemistry, water quality and aquatic biology, hydrology, engineering and contaminant pathway analyses.

The section manages the branch's involvement with the environmental assessment of mining projects, and provides detailed assessments of technical documents submitted by mining companies and consultants. The section also

formulates responses to policy papers from other agencies and branches. Special studies are conducted to address specific needs in the branch program to control pollution from mining operations in the province.

Special studies to note for this fiscal year include: a study on "Abandoned Mines With Tailings", released in October 1989; a study on the two abandoned uranium mines with tailings, Lorado and Gunnar, completed in September, 1989; a study on the Rottenstone abandoned mine, completed in March, 1990; and, a discussion paper on developing waste rock guidelines for Saskatchewan mines, which will form the basis for developing guidelines for characterization and disposal of waste rock.

Radiation Section

The branch has responsibilities for protection of the public from natural radiation hazards. Radon gas occurs naturally from radium decay in soil and rocks. The gas can "build up" in some homes to levels which may cause health effects. The results of province-wide radon level surveys were published by the section in 1985. Follow-up surveys were completed in 1988 in southern Saskatchewan, and a report detailing the results was published in 1989.

The section handles frequent inquiries from the public (what is radon, what are the hazards, where does it come from, how can it be measured, what can be done to reduce levels in a home?). A brochure that provides answers to inquiries was developed and published in 1988. A system to handle inquiries was developed and refined in 1988.

Potash/Coal Section

The Mineral Industry Pollution Regulations require that all mines have discharges of industrial wastes apply for ministerial approval to operate. This section regulates these discharges for the ten potash mines and five coal mines in the province. Through the submission of monitoring reports and by site inspections, environmental control is maintained. Other mining operations in the province regulated in a similar way by this section included a base metal mine, a salt mine, a peat producer and six potassium sulphate developments.

A total of 23 Ministerial Approvals were issued by this section to mining operations during the year.

Potash Mining

Saskatchewan's potash mines are authorized by approvals under the regulations to store waste salt and brine generated by mining and refining operations in approved areas. Excess volumes of brine may be injected into briny aquifers but no other releases are allowed.

All mines are monitoring the effectiveness of the containment systems.

During January, 1990, the Mines Pollution Control Branch received conceptual decommissioning plans form the Saskatchewan potash mines for their sites, particularly the tailings management areas. These were under review at the end of the fiscal year.

The department has established a cooperative approach with the potash industry in an effort to resolve this environmental priority and this industry has a number of studies ongoing for this purpose.

Brine Inflows at Potash Mines

The problem with flooding of International Minerals and Chemical Corporation (IMC) K-2 mine remains under control. The company has been able to reduce the brine inflow considerably but has been unable to eliminate it. Currently IMC are experimenting with backfilling and bulkhead design in an attempt to stabilize the situation.

As a contingency measure, IMC has proposed a new satellite mine adjacent to K1 and K2 to provide sufficient ore for both processing facilities in the event K1 and K2 must be shut down due to water inflows.

Public Safety Division

Mission

To provide safety standards to industry and the general public in the fields of boiler and pressure vessel installations, elevator and amusement ride installations, building and accessibility standards, fire safety and licensing of persons engaged in work of gas and electrical installation.

Activities

Activities of the Public Safety Division are concentrated in three branches and one section reporting to the executive director.

- Mechanical Services Branch
- Fire Commissioner's Branch
- Building Standards Branch
- Licensing and Support Services Section

Mechanical Services Branch

Objectives

- To administer the provisions of *The Boiler and Pressure Vessel Act, The Passenger and Freight Elevator Act* and *The Amusement Ride Safety Act.*
- To establish and enforce minimum safety standards with respect to the design, construction, installation, operation and maintenance of high and low pressure boilers, pressure vessels of all types, pressure plant and other hazardous equipment, elevating devices and amusement rides.
- To ensure a high degree of plant operator and welder skills by means of examinations and the establishment of minimum qualifications.

Activities

- Inspect all pressure vessels and boilers used in the province.
- Inspect and licence all elevating devices and amusement rides installed/operated within the province.
- Verify the adequacy of all new designs of boilers, pressure vessels and related equipment, elevating devices prior to installation, and confirm their concordance with the adopted codes and standards.
- Examine and licence all power engineers, refrigeration engineers, refrigeration plant operators, firemen and pressure welders who will be operating or repairing equipment in the province.

During the year under review, the Boiler and Pressure Vessel Safety Branch and the Elevator and Amusement Ride Safety Branch were amalgamated to form the Mechanical Services Branch.

Legislation and Regulations

The Mechanical Services Branch administers the following acts and regulations pertaining thereto:

- *The Boiler and Pressure Vessel Act*
- *The Passenger and Freight Elevator Act*
- *The Amusement Ride Safety Act*

In order to maintain the uniformity of safety standards throughout Canada, the following codes and standards have been adopted and are administered as part of the regulations under the following acts:

- CSA Code B51 - Boiler, Pressure Vessel and Pressure Piping Code;
- CSA Code B52 - Mechanical Refrigeration Code;
- ANSI B31 - Code for Pressure Piping;
- ASME Code for boilers, pressure vessels, and pressure welding Sections I to XI inclusive;
- Department of Transport specifications for construction and testing of liquified propane portable cylinders;
- CSA Standard CAN 3-B44-M85 - Safety Code for Elevators;
- CSA Standard Z267-M1983 - Safety Code for Amusement Rides;
- CAN/CSA-Z185-M87 - Safety Code for Personnel Hoists;
- CAN 3-Z98-M78 - Passenger Ropeways;
- CAN/CSA-B355-M86 - Elevating Devices for the Handicapped; and,
- CSA Standard B311-M1979 - Safety Code for Manlifts.

Inspections

Boilers and Pressure Vessels

The *Boiler and Pressure Vessel Act* provides for periodic inspections of all high pressure boilers in power plants, low pressure boilers in heating plants and all other pressure vessels and pressure plants used in connection with air, hot water, steam, oil, liquified propane, anhydrous ammonia, compressed gas or for refrigeration purposes. It also provides for shop inspections of all boiler and pressure vessel construction performed in manufacturing plants.

During the year under review, inspectors made a total of 10,230 inspections, including 282 new boilers, 699 pressure vessels and 25 refrigeration plants which were installed in the province. Of these, 495 were manufactured in the province and were shop inspected by inspectors during construction.

During the year, three new sites were reviewed and licensed for the storage and distribution of anhydrous ammonia, which increased the total of anhydrous ammonia plants in the province to 156.

Fourteen safety valves were also reset and re-sealed; mostly on oilfield vessels.

A total of 1,918 improvement orders or recommendations pertaining to improper or hazardous conditions were made by branch inspectors in accordance with *The Boiler and Pressure Vessel Act* and associated regulations.

Under contract arrangements with Public Works Canada, 766 inspections were made under that department's safety code.

The number of inspections performed under *The Boiler and Pressure Vessel Act* during 1988-89 and 1989-90 are shown in Table 14.

Table 14

Number of Inspections Under *The Boiler and Pressure Vessel Act*

Type of Inspection	1989-90	1988-89
Boilers	5,769	5,040
Pressure Vessels	3,855	2,851
Refrigeration Plan	606	332
Total	**10,230**	**8,223**

Elevators

The *Passenger and Freight Elevator Act and Regulations* made thereunder provides for periodic inspection of passenger and freight elevators in the province and for the annual licensing of elevating devices and elevator contractors.

During the year, 1,500 routine elevator re-inspections, 102 acceptance inspections and 123 special inspections were made. Special inspections are defined as : a) those made to approve major changes in installations; and, b) those required to determine whether the equipment falls under the jurisdiction of the act. Acceptance inspections are those performed on new installations before they are approved for operation.

Amusement Rides

The Amusement Ride Safety Act and applicable regulations provide for initial and subsequent inspections of amusement rides in the province. Two hundred and thirty-four inspections were performed during 1989-90, compared to 206 for the year 1988-89.

Licensing

Table 15 indicates the number of annual licences issued for elevating devices during the years 1988-89 and 1989-90.

Table 15

Licences issued under *The Passenger and Freight Elevator Act*

Type of Licence	1988-89	1989-90
Passenger elevator	1,238	1,278
Freight elevator	200	197
Hand-power freight	15	14
Hydraulic freight	72	69
Electric dumbwaiter	152	149
Handicapped lift	161	174
Manlift	53	52
Escalator	23*	23*
Workmans hoist	-	-
Chairlift	1	1
T-Bar	12	12
Rope tow	27	29
Elevator Contractors		
Class 'A'	9	9
Class 'B'	16	15
Class 'C'	1	2
Total	**1,980**	**2,024**

* Licences issued covered 53 escalators

Amusement Rides

A total of 203 annual licences were issued for the year 1989-90.

Approval and Registration of Design

As provided under *The Boiler and Pressure Vessel Act, The Passenger and Freight Elevator Act, The Amusement Ride Safety Act,* design drawings and specifications for every new design and major alteration of boiler, pressure vessel, fittings, elevating devices and amusement rides to be used in the province must be submitted to the office of the chief inspector for approval and registration prior to commencement of construction.

Boilers and Pressure Vessels

During 1989-90, 1,100 new designs were checked for compliance with the applicable codes and regulations in force, this number includes 138 weld procedures. Of these, 924 were registered and 176 rejected.

Elevators

Ninety-Five designs/specifications for new installations and major alterations were approved and registered during 1989-90, as shown in Table 16.

Amusement Rides

Six designs/specifications were approved during 1989-90 compared to zero for the year 1988-89.

Table 16

Approvals and Registrations Issued Under the *Passenger and Freight Elevator Act*

Type of Installation	1989-90	1988-89
Passenger elevator	53	45
Freight elevator	9	4
Dumbwaiter	1	1
Handicapped lift	26	25
Man lift	-	-
Escalator	4	2
Workmans hoist	-	-
T-Bar	-	-
Rope tow	2	1
Total	**95**	**78**

Engineer's and Fireman's Qualifications

Every engineer or fireman responsible for the operation of a high pressure boiler, a low pressure boiler of 300 or more kilowatts, a steam plant or refrigeration plant must hold a certificate of an appropriate class, as specified in *The Boiler and Pressure Vessel Act*. Such certificates are issued to persons who have the necessary qualifications and must pass an exam.

All permanent certificates are valid for as long as they continue to be registered for a further five-year period with the branch. Temporary certificates are valid for one year from the date of issue and may be renewed without examination if application for renewal is made in accordance with the regulations.

Under Section 29 of *The Boiler and Pressure Vessel Act*, the chief inspector may, in exceptional circumstances, issue a permit for a limited period of time authorizing the operation of a steam plant by a person holding a certificate one class lower than the appropriate class.

Table 17 shows certificates issued in each classification and the number of examination papers written in 1989.

Inspecting tower and sweep connections on a swing boat ride.

Table 17

Engineer and Fireman Qualifications, 1989-90

Type of Certificate	Number of Exams Written	Number of Certificates Issued	Annual Registrations
First Class	101	9	39
Second Class	156	16	91
Third Class	258	50*	83
Fourth Class	216	115***	175
Fifth Class	104	85	130
Heating Plant Engineer	-	-	-
Refrigeration Engineer	-	-	-
Permanent Certificates	**907**	**323**	**606**
Provisional	-	-	-
Special Provisional	1	28	
Fireman	612	975	
Refrigeration Operator	74	126	
Temporary Certificates	**687**	**1,129**	
Thirty-day Permits	-	23	
Ninety-day Permits	-	104	

Note: The above totals include the following certificates issued on an exchange with other provinces and duplicate certificates issued:

- **One - First Class Certificate**
- **Five - Third Class Certificates**
- **Nineteen - Fourth Class Certificates**

*** - Indicates duplicate certificate issued**

Welding Regulations under The Boiler and Pressure Vessel Act, provide that any pressure welding on a boiler, pressure vessel, pressure piping, or pressure plant may be done only by persons authorized by the Boiler and Pressure Vessel Safety Branch.

Welding authorizations are issued to persons who have passed a welder's qualification test, supervised by an inspector appointed under The Boiler and Pressure Vessel Act. They are renewable eighteen months from the test date, subject to testing.

The number of welding qualification tests conducted during the 1988-89 and 1989-90 fiscal years are shown in Table 18.

Table 18

Welding Qualification Tests

Type of Test	1989-90	1988-89
Qualification tests (each for four positions)	809	743
Pipeline and other special tests	373	260
Total Tests	**1,182**	**1,003**

Accidents

During the past year, 16 accidents were reported and investigated. Seven accidents involved boilers and pressure vessels; five accidents involving electrical component failure in the levelling circuits of elevators were reported; and, four escalator accidents were reported with children involved.

Fire Commissioner's Branch

Objectives

- To administer The Fire Prevention Act, 1980.
- To provide a high measure of public safety.
- To minimize property loss as a result of fire.

Activities

- Foster fire prevention.
- Collect and disseminate information regarding fires in the province.
- Investigate or hold inquiries into a fire, where considered necessary or to ascertain cause, origin and circumstances.
- Inspect buildings or premises and order remedy or removal of conditions likely to cause fires.
- Provide training in firefighting and fire prevention.
- Authorize and/or undertake surveys and make recommendations respecting fire equipment and fire protection and provide assistance to other government departments, municipalities, industry, organizations, business committees and individuals with respect to fire safety measures.
- Examine plans and specifications for public and other buildings as required by regulations.

The Annual Report of the Fire Commissioner is published separately, based on the calendar year. It contains more detailed information on the activities of the Fire Commissioner's Branch, the causes of fires and the extent of fire loss in Saskatchewan.

Legislation and Regulations

The Fire Commissioner's Branch enforces *The Fire Prevention Act (1980)* with general provisions applying to all property and the regulations enacted thereunder.

The branch also inspects and carries out responsibilities with regard to regulations adopted under *The Housing and Special-care Homes Act, The Residential Services Act* and *The Mental Health Act* with respect to fire safety in Special-care homes, homes for the aged, group homes, approved homes and private-service homes.

Inspections

The province is divided into eight inspection districts. Fire Inspectors are based in North Battleford, Prince Albert, Regina, Saskatoon, Swift Current and Yorkton. The Estevan and Weyburn districts are serviced by inspectors based in Regina.

Inspector's (fire prevention officers) of the Fire Commissioner's Branch carried out an inspection program in 1989-90 in various classes of buildings with the exception of dwellings, where inspections were made only as a result of a complaint or obvious hazard. Inspection of dwellings by local authorities is encouraged so the branch can minimize the large inspection staff which would otherwise be required for this activity. Hospitals, institutional buildings, schools and other places of public assembly were inspected in the interest of fire safety. Government-owned buildings were also inspected for fire safety and evacuation procedures.

Routine inspections were conducted during the fiscal year in 207 towns, villages and hamlets.

In urban municipalities with paid fire departments, *The Fire Prevention Act* (1980) provides authority and assigns responsibility for inspections.

During the period under review, branch fire prevention officers made 4,357 inspections excluding oil burner inspections, which are mentioned elsewhere in this report. Of this number 795 were special inspections and 569 were reinspection follow-ups on previous orders. A total of 465 orders to remedy certain conditions within specified periods of time were issued. Inspections and improvement orders are shown in Table 19 according to class of property inspected.

Table 19

Inspections and Improvement Orders by Property Classification

Class of property	Inspection (calls)	Improvement orders issued
Total	4,357	464
Assembly	2,195	225
Agriplexes	6	0
Amusement centres (arcades)	4	0
Bowling alleys	16	0
Change houses	0	0
Churches	470	10
Clubs	21	0
Court rooms	0	0
Day care centres	5	0
Funeral homes	0	0
Halls	391	39
Libraries	19	1
Licensed dining rooms	4	1
Museums	20	1
Pool rooms	1	0
Restaurants (cafes)	164	5
Rinks	466	56
Senior citizen centres	121	10
Schools (sheltered workshops, activity centres)	456	97
Swimming pools	15	4
Theatres	16	1
Institutional	270	28
Correction centres	22	1
Hospitals	96	12
Hostels	27	0
Jails	0	0
Nursing homes	114	15
Rehabilitation centres	11	0
Residential	797	168
Apartments	163	18
Approved homes	54	0
Cabins	50	0
Convents, monasteries	0	0
Dormitories	22	7
Group homes	45	0
Houses	17	0
Hotels	307	129
Lodging houses	9	0
Mobile homes	3	0
Motels	81	13
Private-service homes	22	0
Summer camp buildings	24	1

Table 19 continued
Inspections and Improvement Orders by Property Classification

Class of property	Inspection (calls)	Improvement orders issued
Business	192	1
Banks (credit unions)	10	0
Barber and hairdressing shops	2	0
Clinics (medical and veterinary)	4	0
Health spas	1	0
Laundromats and drycleaners	8	0
Offices	167	1
Mercantile	136	1
Car washes	1	0
Department stores	6	0
Exhibition halls	0	0
Shops	6	0
Stores	94	1
Supermarkets	29	0
Industrial	767	41
Above and underground tanks	42	8
Aircraft hangers	0	0
Auto body shops	13	1
Bakeries	3	0
Bulk oil plants (propane)	230	22
Cold storage plants	0	0
Concrete plants	0	0
Creameries and dairies	0	0
Factories	3	0
Fertilizer buildings	3	0
Fire stations	55	0
Hatcheries	0	0
Lumber yards	15	0
Machine shops (metal, welding)	11	2
Manufacturing plants	1	0
Meat packers	0	0
Mills	1	0
Oil field supplies	0	0
Plumbing and heating shops	0	0
Power houses	0	0
Printing shops	0	0
Pump houses	5	0
Repair garages (implements)	124	4
Service stations	151	3
Storage garages and rooms	21	1
Upholstery shops	0	0
Warehouses (storage sheds)	78	0
Water treatment plants	1	0
Woodworking factories (shops)	2	0
Workshops	8	0

* Includes 795 special inspections and 569 re-inspections.

Plans and Specifications

Effective April 1, 1989, the Building Standards Branch assumed the responsibility of reviewing plans and specifications for new buildings or additions to existing buildings.

Plans required to be submitted were examined for compliance with the *Flammable Liquids Regulations*, the *Hotel Regulations*, the *Regulatiuons Governing Fire Safety in Educational Buildings*, the *Regulations Governing the Installation of Automatic Sprinkler Systems*, *The Uniform Building and Accessiblity Act* and pertinent sections of the regulatons under *The Housing and Special Care Homes Act*.

In addition to plans reviewed by *The Building Standards Act*, the Fire Commissioner's Branch continued to review plans for churches, lodge rooms, public halls and private schools with an occupant load of sixty persons or less. The following table shows the number of plans and specifications reviewed since 1987-88.

Table 20

Plans and Specifications Reviewed by Disposition

Disposition	1987-88	1988-89	1989-90
Approved	412	338	455
Approved subject to alteration	614	492	497
Rejected or pending	79	71	74
Design consultations	109	113	279
Total	**1,214**	**1,014**	**1,305**

Fire Investigation

Fire Commissioner's staff participated in 96 investigations including cases in which arson was suspected, and in cases in which, for fire prevention reasons, it would be in the public's interest to determine the cause of the fire. While fire prevention officers made a number of investigations unassisted, they frequently aided law enforcement officers in determining the cause of the fire, whether accidental or intentional in origin.

It should be noted that all fires reported are investigated for cause, origin and circumstance by either the Local Assistant to the fire commissioner (secretary-treasurers, fire chiefs and their staff) or police, insurance agencies, special investigation units, the Fire Commissioner's Branch staff or a combination of these forces.

Fire Record

Under the provisions of *The Fire Prevention Act (1980)* the fire commissioner is required to maintain a record of fires occurring in the province, including facts relating to origin and circumstances, as determined by Fire Commissioner's Branch investigations, reports of fire chiefs, insurance adjusters and police. Data contained in reports of fires are summarized in the Annual Report of the Fire Commissioner.

The property loss for 1989 was $46,066,565. Fires in one and two family dwellings continued to be highest in number; in 1989, 25 per cent of all fires reported were in dwellings. This represents a total of 737 fires with a property loss of $11,217,175.

The number of lives lost in fires in Saskatchewan decreased in 1989; 13 persons (11 men, 1 woman and 1 child) lost their lives in fires.

The Fire Prevention Act (1980) and regulations thereunder require that distributors and wholesalers of oil burners obtain an annual licence, and that firms or persons installing and servicing oil-burning equipment take out an annual or quinquennial licence, as authorized by the fire commissioner, for such work. The number of licences and the number of oil burner installation permits issued during the fiscal year ended March 31, 1990, are shown in Table 21. During the 1989-90 fiscal year, 23 oil burner inspections were made.

Table 21

Oil Burner Licences and Permits Issued under *The Fire Prevention Act* (1980)

Type of licence or permit	1989-90
Wholesalers or manufacturers (annual)	5
Installers (annual)	11
Installers (quinquennial)	23
Total oil burner permits (annual)	**33**

Fire Prevention

During the year under review, fire prevention and fire training films were widely distributed throughout the province. These films were used by schools, fire departments and various organizations. These films are maintained by Media House Productions and bookings for such films can be made through them. Some films, slides and VCR tapes are also available from the Fire Commissioner's Branch.

The Fire Commissioner's Branch continued to advise municipal councils and fire departments on fire protection requirements. A total of 88 fire department surveys were made during the year. Inspectors advised institutions, hospitals and hotels on fire emergency programs, fire exit drills and other safety matters. In addition, inspectors attended 206 special meetings with fire chiefs, local authorities and other persons concerned with fire prevention. The fire prevention education program is summarized in Table 22.

Fire Prevention Week

In 1989, the week of October 8 - 14 was designated Fire Prevention Week and was emphasized by means of lectures to school children, distribution of films, special fire prevention literature, news releases and special messages from both the minister-in-charge of *The Fire Prevention Act* (1980) and the fire commissioner.

The Fire Commissioner's Branch again sponsored the Annual Fire Prevention Poster Competition for public and high schools. Thirty-three cash awards as well as certificates were provided. The competition was divided into eight groups, covering Grades 1 to 12 in four divisions for city and rural school categories. A total of approximately 3,000 entries were received. Winners of the contest were notified of their awards by the minister-in-charge of *The Fire Prevention Act* (1980).

Table 22

Selected Activities in Fire Prevention Education, 1989-90

Selected activities	Number of Meetings	Attendance
Public meetings	18	1,159
School lectures	201	16,260
Other lectures and demonstrations	41	2,272
Film showings	604	23,184
Fire department meetings	48	296
Municipal council conferences	12	116
Meetings with school boards	4	23
Meetings with hospital boards	3	17
Meetings with fire chiefs	49	—
Court cases	5	—
Fuel Leaks	3	—
School fire drills	13	1,619
Building/design consultants	128	—
Plans Review	27	—
Learn Not to Burn In-service programs	2	70

Note: Attendance figures are not recorded for all activities.

Firefighters' Training and Fire Prevention Program

The year 1989 saw expansion of the training staff from four to six fire prevention officers. The addition of these two positions in Saskatoon will assist with further development and delivery of training programs throughout the province.

In 1989-90, scheduled training programs for fire fighters were conducted in 81 communities throughout Saskatchewan. This training involved 1,909 industrial, volunteer and paid fire fighters.

Recommendations by the Select Committee suggested fire fighter training be standardized and provided in accordance with National Fire Protection Association Standards. On September 19, 1989, the Fire Commissioner's Branch joined Alberta and became the second Canadian agency accredited to certify fire fighters in accordance with these Professional Qualification Standards.

Many fire departments have completed Level 1 modules and several are working towards certification of their entire membership.

To support delivery of training programs, Fire Service Instructor courses were conducted in Swift Current, Prince Albert, Yorkton and Regina. These new Instructors will deliver programs to their own departments as well as assist the Fire Commissioner's Office with delivery.

Three regional vehicle extrication courses were delivered jointly with Saskatchewan Emergency Measures Organization. Eighty representatives from various communities were involved in a Train the Trainer Program. These trainees returned to their respective communities where they delivered training to their members.

In May of 1989, the Eleventh Annual Fire Investigation Course was held at the Saskatchewan Police College. This program has grown in importance and developed a reputation as one of the better basic fire investigation programs in Canada.

One of the most successful fire prevention programs continues to be the Hospital and Special Care Home Program. More than 1,543 staff members in 63 hospitals and nursing homesreceived training in fire prevention, fire protection equipment and the safe relocation and evacuation of residents.

Finally, 839 people took part in 17 miscellaneous fire prevention programs. These sessions involved members of the St. Louis Rehabilitation Centre, Wascana and Kelsey Institute, Prince Albert Youth Camp and several industrial organizations.

Building Standards Branch

Objectives

- To provide minimum safety standards for the public with respect to the design, construction, use and occupancy of buildings.
- To provide standards that will ensure that an appropriate range of buildings will be accessible to persons with physical disabilities.
- To assist municipalities in the administration and enforcement of the provisions of *The Uniform Building and Accessibility Standards Act and Regulations.*

Activities

- Maintenance and development of regulations for minimum safety standards with respect to design, construction, use and occupancy of buildings.
- Maintenance and development of regulations that ensure that an appropriate range of new buildings are accessible to persons with physical disabilities.
- Assistance to municipalities by the provision of information and advice to enable them to properly administer and enforce the provisions of *The Uniform Building and Accessibility Standards Act and Regulations.*
- Provision of assistance to building inspectors in the interpretation of the act and regulations and advice when needed for the performance of their duties.
- Liaison with the building departments of other provinces and territories, the Associate Committee on the National Building Code of Canada and other appropriate organizations to promote the development of the *National Building Code* and the *Saskatchewan Building and Accessibility Standards Regulations.*
- The review of plans for buildings and installations on behalf of the Fire Commissioner's Branch where regulations under *The Fire Safety Act* and others require the approval of the fire commissioner.

Legislation and Regulations

The Uniform Building and Accessibility Standards Amendment Act (1989) was completed and enacted during this fiscal year. The amendments were in response to experience gained with this legislation since its inception and the expressed needs of municipalities and the public.

The development of regulations for the purpose of establishing appropriate fees to be charged to municipalities for assistance in enforcement of the act and regulations was initiated during this fiscal year.

Studies were initiated that would permit the phasing out of building regulations under other acts which conflict with the Building Standards Regulations and cause unnecessary complications for regulatory authorities and the public.

Presentations on the subject of *The Uniform Building and Accessibility Standards Act and Regulations* to representatives of urban, rural and northern municipalities, interior designers, architects, engineers and building officials. These presentations provided explanations and advice on administration and enforcement of the Act and regulations and on how this legislation effects these various groups and individuals.

The Saskatchewan Building and Accessibility Standards Appeal Board

The board met once during this fiscal year to hear an appeal. While this was the only meeting, the board was active in providing assistance to the Branch in interpretation of *The Accessibility Standards Regulations.*

Communication

A quarterly newsletter to provincial building inspectors and interested or affected persons was published. This newsletter contained information, book reviews, news on building matters, advice on administration and enforcement, articles and information sheets for use in the process of building regulation. Copies were sent, free of charge, to all such persons upon request.

Licensing and Support Services Section

Objectives

- To administer the provisions of *The Gas Licensing Act* and *The Electrical Licensing Act.*
- To provide a high degree of safety protection to the public with respect to gas and electrical installations by establishing minimum qualifications pertinent to the licensing of journeymen and contractors engaging in the work of gas and electrical installations.

Activities

- Licence contractors, employers and trades persons making gas and electrical installations, suppliers of gas and electrical equipment and propane distributors.

Gas Licensing

Under the provisions of *The Gas Licensing Act,* propane distributors (storage and filling plant operators), installation contractors, employers, fitters and wholesale suppliers of gas appliances and equipment are required to hold a licence. Licenses are issued on a one year basis or for a term not exceeding five years to individuals or companies who comply with the conditions of licensing set forth in the act and regulations.

The number of individual licences issued in 1989-90, and the total licences in effect during the 1988-89 and 1989-90 fiscal years are shown in the following table:

Table 23

Licences in Effect Under the *Gas Licensing Act*

Type of Licence	Individual Licences Issued 1989-90	Total Licences in Effect 1989-90	Total Licences in Effect 1988-89
Domestic gas fitter	208	891	903
General gas fitter	230	1,124	1,129
Domestic gas contractor	123	235	240
General gas contractor	140	351	359
Limited gas contractor	5	24	31
Gas supply house	6	16	17
Employer's	21	57	57
Propane distributors	161	445	445
TOTAL	**894**	**3,143**	**3,181**

Electrical Licensing

Under the provisions of *The Electrical Licensing Act,* contractors, employers, journeymen and wholesale suppliers of electrical equipment are required to hold an appropriate class of licence. Licences are issued on a one year basis or for a term not exceeding five years to individuals or companies who comply with the conditions of licensing set forth in the Act and Regulations.

The number of individual licences issued in 1989-90 and the total number of licences in effect during the 1988-89 and 1989-90 fiscal years are shown in the following table.

Table 24

Licences in Effect Under *The Electrical Licensing Act*

Type of Licence	Individual Licences Issued 1989-90	Total Licences in Effect 1989-90	Total Licences in Effect 1988-89
Full Contractor	396	915	952
Limited Contractor	50	53	60
Restricted Contractor	28	63	66
Employers	130	141	139
Supply House	23	23	27
Full Journeymen	606	4,157	4,141
Restricted Journeymen	19	148	157
TOTAL	**1,252**	**5,500**	**5,542**

Emergency Measures Organization

Objectives

- To develop an effective emergency response structure at both the provincial and municipal levels of government to ensure the survival and recovery of our citizens and communities from any peacetime emergency or disaster.
- To enhance the national capability to respond to any national emergency.

Activities

- Ensure all departments and agencies develop a response capability for meeting their own emergencies as well as providing assistance to municipalities and other departments as required.
- Encourage and assist municipalities with emergency planning, training and exercises to provide a greater capability to respond to emergencies.
- Encourage development of Mutual Aid Areas so all resources in an area can be brought to bear on any emergency.
- Develop programs to ensure the Government will be able to continue normal or near normal operations during a major emergency or disaster.
- Utilize federal funding available under the Joint Emergency Planning Program to further the development of emergency planning in Saskatchewan.
- Develop and conduct training programs to meet the emergency planning needs of departments, agencies and municipalities.

Provincial Emergency Preparedness

The Provincial Emergency Planning Act is now legislation and in the hands of every local government. The emergency planning highlights include:

- Clarification of roles and responsibilities of provincial and municipal governments;
- Local governments to be extended the authority to declare local emergencies; and
- Good Samaritan Clause protects people from legal action when lending assistance during a locally declared emergency.

Efforts continue to ensure various agencies and departments fulfill their obligation outlined in the cabinet directive.

Municipal Emergency Preparedness

Municipal emergency preparedness continues to be the main thrust of the efforts put forward by the Saskatchewan Emergency Measures Organization.

Few communities were affected by forest fires in the 1989-90 year.

In the case of the forest fires, communities were evacuated, and later returned with the assistance of municipal and provincial agencies.

Two communities, one in the north and one in the south of the province, suffered from minor flood damage. Although no lives were lost, both areas were disrupted for several days. Recovery was quick with the assistance of local and provincial agencies.

In all, over 400 municipal visits were made, as well as contact through letters, phone calls and training courses with the following results:

- Over 40 municipal Emergency Measures Organizations were established, including both urban and rural local governments.
- There were six more Mutual Aid Areas formed.
- There were 10 municipal paper exercises and two major airport exercises conducted.
- Training continued with plans to hold two Mayors and Elected Officials Courses, two General Orientation Courses and an EMO Co-ordinators Conference, in conjunction with the federal Emergency Preparedness Canada staff.
- Eleven Dangerous Goods Courses were conducted at the municipal level by staff from the Saskatchewan Emergency Measures Organization.
- Total attendance at all courses and conferences exceeded 700.
- Suitable municipal candidates continued to take advantage of the training offered at the federal Emergency Preparedness College at Arnprior, Ontario.

Airport exercises help prepare first responders

Joint Emergency Planning Program (JEPP)

The Joint Emergency Planning Program (JEPP) is a federal program which provides $6.5 million across Canada to help fund those projects which will enhance the emergency response capabilities at both the provincial and municipal levels. Following the signing of a Memorandum of Understanding between the Government of Canada and the Province of Saskatchewan in 1985, the Saskatchewan Emergency Measures Organization negotiated a five-year emergency preparedness program with Emergency Preparedness Canada which identified joint priorities and interest areas and qualified for funding under JEPP. The budget for year five of the program, 1989-90, received the approval of Emergency Preparedness Canada.

In 1989-90, over $463,476 in federal funding for JEPP projects was approved for Saskatchewan. This amount included $182,030 for our provincial five-year program and $281,144 for 20 municipal projects which were submitted.

JEPP funding at work supporting "Jaws of Life" training.

National Emergency Arrangements (NEA)

In accordance with the Memorandum of Understanding, signed between the government of Canada and the government of Saskatchewan in 1985, the government of Saskatchewan is assisting the federal government in implementing 11 NEAs.

The government has contracted a consultant to coordinate the necessary federal-provincial agreements to implement these national emergency agencies.

The Province of Saskatchewan is putting forward a model for Food and Agricultural Emergency Response (FAERS). Much progress has been made with the federal government in developing the National Emergency Arrangements for Energy (Gas and Electricity). In the next year, Saskatchewan will begin work with the federal government on the development of:

- National Emergency Arrangement for Transportation
- National Emergency Arrangement for Health & Welfare Canada
- National Emergency Arrangement for Manpower
- National Emergency Arrangement for Communication
- National Emergency Arrangement for Construction

Table 25

Municipal Projects Paid Under JEPP, 1989-90

No. Project	Actual Cost	Federal Contribution
80 Gull Lake Communications	$ 20,998.96	$ 10,499.48
81 Creighton Communications	32,059.73	16,029.86
82 Hudson Bay Communications	18,536.70	9,268.35
83 Wadena Rescue Vehicle	77,022.01	38,511.00
84 Coronach Communications	74,057.29	37,028.64
85 Dalmeny Rescue Vehicle	14,102.60	7,051.30
86 Dalmeny Communications	30,253.83	14,210.99
87 Esterhazy Rescue Vehicle	13,482.00	6,741.00
88 Herbert Rescue Vehicle	24,169.15	12,084.57
89 Battlefords Chemical Suits	9,520.00	4,760.00
90 Wadena Rescue Vehicle	70,441.63	55,220.81
91 Quill Lake Rescue Vehicle	11,874.82	5,937.41
92 St. Walburg Rescue Vehicle	24,855.95	12,427.97
93 Meadow Lake Communications	31,374.54	15,687.27
94 Moose Jaw Communications	14,875.28	7,437.64
95 Central Butte Communications	56,308.19	28,154.09
96 Nipawin Rescue Equipment	6,640.23	3,320.11
97 Maple Creek Rescue Equipment	4,299.26	2,149.63
98 Rosthern Communications	18,618.43	9,309.21
99 Humboldt Communications	9,403.00	4,701.50
	$562,893.60	**$281,144.80**
20 Projects		(49.9%)

Table 26

Provincial Projects Paid Under JEPP, 1989-90

No. Project	Actual Cost	Federal Contribution
24-5/89 Sask. Five Year Plan	$442,619.00	$182,030.00
	$442,619.00	**$182,030.00**
1 Project		(41.13%)

Administration Branch

Objectives

- To provide central administrative, financial, human resources, computer systems and office support services to all branches.
- To assist and advise department management; and develop, evaluate and implement administrative policies.
- To represent the department and provide liaison with private and central government agencies for the acquisition of resources.

Activities

- Executive administration to facilitate department management for the minister and deputy minister.
- Management services to advise on administrative management operations; preparation of budgets, legislation, cabinet and treasury board submissions; and administrative policy development and implementation.
- Financial services for central accounting of expenditures and revenues, contract administration, and grant payment authorization; and the acquisition of CVA vehicles, supplies, equipment and services.
- Human resources services for management of central records, forms, filing, mail and library functions; provision of office space, furniture and parking; and staff recruitment, classification and development.
- Systems services for acquisition, management and operation of all department computer systems; provision of analyst support services; and co-ordination of central word processor services.

Financial Services

The Financial Services Section is responsible for all department financial functions which include purchasing, budgeting, financial reporting, processing of payments and the collection of department revenue. In addition to offering a full range of financial services, the section administers the departments CVA vehicle fleet, telephones and the central stockroom.

A total of 8,074 payments were processed over the year. A CVA vehicle fleet of 42 vehicles was maintained for use by employees on government business during the fiscal year.

The section is fully automated using personal computers and the government revenue and expenditure system. Central control of equipment inventory, CVA vehicles and telephone requirements have been aided by this automation.

Table 27

Department Expenditures and Revenues

Expenditures	$	% Total
Administration	1,258,081	11.2
Planning and Assessment	781,172	6.9
Environmental Protection	4,313,892	38.4
Public Safety	2,660,031	23.7
Emergency Measures Organization	406,186	3.6
Payments to the Saskatchewan Property Management Corporation	783,215	6.9
Grants for Environmental Purposes	33,586	.3
Grant to Toxicology Research Centre	200,000	1.8
Grant to Water Appeal Board	52,285	.5
Environmental Initiatives	708,777	6.3
Members of the Executive Council	40,825	.4
Total	**11,238,050**	**100%**

Revenues	$	% Total
Boiler and Pressure Vessel Safety - Fees/Licences	1,137,695	61.2
Elevator and Electrical Safety - Fees/Licences	210,000	11.2
Amusement Ride - Fees/Licences	9,615	.5
Gas Safety - Fees/Licences	79,640	4.3
Fire Commissioner Licences	1,667	.1
Emergency Measures Organization - Cost Share Claims/Canada	88,571	4.8
Pesticide Container Disposal Program	319,999	17.2
Other	12,560	.7
Total	**1,859,747**	**100%**

Figure 4

Saskatchewan Environment and Public Safety Percentage Allocation of Department Expenditures

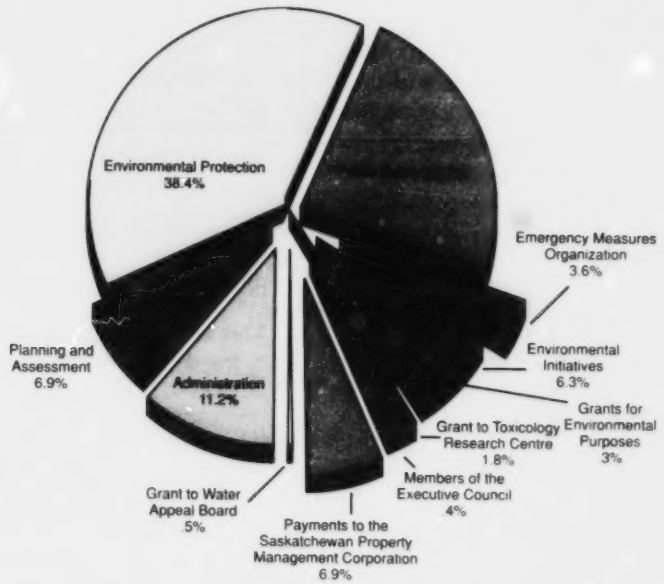
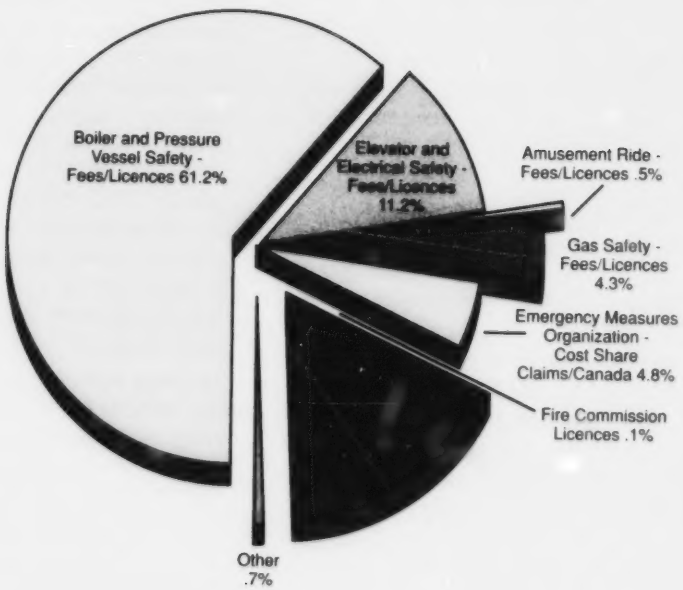


Figure 5

Saskatchewan Environment and Public Safety Percentage Allocation of Department Revenues



Human Resources

This section provides central personnel, accommodation, library, records and mail services to the department. The government automated Human Resources System is utilized for most personnel transactions through the use of personal computers.

A total of 47 recruitment and 17 classification actions occurred during the fiscal year.

In addition to this, a total of 22 non-permanent employees were recruited to meet program requirements.

The staff development function continued as an important factor in meeting the training needs of department staff. Employees participated in 48 training courses over the year representing 181 person days of training for the department.

Table 28

Department Position Allocation

Program	Person/Years	% Total
Administration	22.0	13
Planning and Assessment	18.0	11
Environmental Protection	65.0	38
Public Safety	60.3	36
Emergency Measures	3.0	2
Total	**168.3**	**100**

Department Library

The library subscribed to periodicals and purchased books, reports, pamphlets and microfiche for staff. The library also obtained inter-library loans, and coordinated staff requests for computer searches.

The library houses 800 books, 5,300 government documents, and annual reports for 53 agencies. it has subscriptions for 160 journals and newspapers. It is also a depository for copies of Environmental Impact Statements for public use during review periods.

Table 29

Department Library Services

Inter-library loans (from other libraries)	425
Inter-library loans (to other libraries)	90
Circulation to staff	1130
Circulation to public	110
Reference questions	505
Book orders for the department	478
New journal orders for the department	4
Materials catalogued	458

Systems Services

This section coordinated all computer programs in the department and participated in systems studies to improve effectiveness and efficiency of department operations. Services included assisting branches in the acquisition of computer equipment, providing analyst support services and developing computer programs for use by the department.

The section employed a student through the SIAST Work Study Program to enhance its analyst resources. During the fiscal year, the section assisted in acquiring 53 computers, 9 laser printers, 32 letter quality printers, 6 portable computers and software for use in department program branches.

Major activities for the section involved equipment acquisition, installation, and user training support. Systems were developed for the storage of hazardous substances (Air and Land Protection Branch), for the validation of cash received, cash mail recording and general ledger accounting (Financial Services Section) and for maintaining an inventory of all microcomputer hardware and software within the department (System Services Section). Executive management within the department were also provided with computer equipment.

Progress was made on the development of a Department Informatics Strategic Plan and Integrated Department Information System.

Table 30

Department Computer Systems

Branch/System (s)	Description
Administration	
Revenue and Expenditure (RES)*	Government accounting and payment system
Human Resources (HRS)*	Government personnel database and payroll system
MicroResource Manager (MRM)	Database of computer hardware and software
Spreadsheet	Decision assist for revenue accounting and system proposals
Cash receipts	System to validate cash received, the cash mail record and general ledger accounts for licensing and inspection systems
Planning and Assessment	
Spreadsheet	Decision assist for planning/proposals
Generalized Retrieval and Storage Package (GRASP)*	Database of department mailing list
Air and Land Protection	
Environmental Data Management (EDMS)	Air quality monitoring database
Spill Reporting	Spills of pollutants reported to the department
Landfills and Liquid Waste Haulers	Database for regulations and permits
Modelling for Groundwater Resources	Decision assist for groundwater analysis
Storage of Hazardous Substances	Database of storage facilities
Agriculture Chemical Collection	Database of chemicals locations and collection information
Spreadsheet	Decision assist for air quality, and land based analysis
Mines Pollution Control	
Modelling Hydrogeological Contaminants	Decision assist for mine operation analysis
Spreadsheet for Radon Data	Analysis of radon data
Water Quality	
ESQUADAT*	Database of chemical and bacteriological data on surface water, drinking water and wastewater
BIODAT*	Database of biological data
WINDAT	Database of municipal water and sewage works
Spreadsheet/Modelling	Decision assist for water quality monitoring
EnviroBase	Database of groundwater for Regina Aquifer
Bacti	Database of bacteriological data
Construction	Database of municipal facilities construction
Licensing and Support Services	
Gas Licensing Renewal	Issuing of contractor, employers and trades persons licenses; preparation of reports
Electrical Licensing Renewal	Issuing of contractor, employer and journeyman licenses; preparation of reports

Table 30 continued
Department Computer Systems

Branch/System (s)	Description
Fire Commissioner	
Fire Statistics	Database for fire statistics
Sprinkler Modelling (SPRINKS)	Evaluation of sprinkler system design
Fire Exam	Database of fire examinations questions
Mechanical Services	
Boiler and Pressure Vessels Inspections and Invoicing*	Database of boilers and pressure vessel inspection, scheduling and invoicing for inspection activities
Licensing of Engineers and Firemen	Issuing of engineer and fireman certificates
Elevator Licensing Renewal	Issuing of elevator licenses
Amusement Ride Licenses	Issuing of amusement ride licenses
Emergency Measures Organization	
Line Load Control	Database of emergency response individuals

Note: All above systems are operated by standalone microcomputers, except for systems marked with an asterisk which utilize Westbridge mainframe support. All branches in the department have Word Processing systems for administrative support.

List of Tables

Planning and Assessment Division

Environmental Assessment Branch

		Page
Table 1	Projects Undergoing an Impact Assessment or Undergoing Screening at Year End	8
Table 2	Projects Screened - Impact Assessment Not Required	9
Table 3	Assessment Process Completed	11
Table 4	Projects Deferred or Cancelled	11

Saskatchewan Round Table on Environment and Economy

Table 5	Saskatchewan Round Table on Environment and Economy Membership, 1989-90	17

Environmental Protection Division

Air and Land Protection Branch

Table 6	Classification of Permits	21
Table 7	Spill Statistics by Cause, Number of Incidents and Quantity	23
Table 8	Spill Statistics by Product, Number of Incidents and Quantity	24
Table 9	Waste Dangerous Goods Transportation Registrations	27
Table 10	Volumes of Waste Dangerous Goods Transported (metric tonnes)	27
Table 11	Municipal Landfill Activities	27
Table 12	Transportation of Dangerous Goods Registrations	27
Table 13	Hazardous Substances Regulations - Registered Storage Facilities by Industrial Sector	29

Public Safety Division

Mechanical Services Branch

Table 14	Number of Inspections Under *The Boiler and Pressure Vessel Act*	40
Table 15	Licences Issued Under *The Passenger and Freight Elevator Act*	40
Table 16	Approvals and Registrations Issued Under *The Passenger and Freight Elevator Act*	41
Table 17	Engineer and Fireman Qualifications, 1989-90	42
Table 18	Welding Qualification Tests	42

Fire Commissioner's Branch

Table 19	Inspections and Improvement Orders by Property Classification	44
Table 20	Plans and Specifications Reviewed by Disposition	46
Table 21	Oil Burner Licences and Permits Issued Under *The Fire Prevention Act* (1980)	46
Table 22	Selected Activities in Fire Prevention Education, 1989-90	47

Licensing and Support Services Section

Table 23	Licences in Effect Under *The Gas Licensing Act*	50
Table 24	Licences in Effect Under *The Electrical Licensing Act*	51

Emergency Measures Organization

Table 25	Municipal Projects Paid Under JEPP, 1989-90	54
Table 26	Provincial Projects Paid Under JEPP, 1989-90	54

List of Tables continued

Page

Administration Branch

Table 27 Department Expenditures and Revenues 56
Table 28 Department Position Allocation 58
Table 29 Department Library Services 58
Table 30 Department Computer Systems 59

List of Figures

		Page
Figure 1	Industrial Permits Issued, 1975-89	21
Figure 2	Air Quality Complaints, 1981-89	23
Figure 3	Chloride Trends at South Saskatchewan River - Outlook, Sask.	31
Figure 4	Saskatchewan Environment and Public Safety Percentage Allocation of Department Expenditures	57
Figure 5	Saskatchewan Environment and Public Safety Percentage Allocation of Department Revenues	57